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I. INTRODUCTION

A. Qualifications

1. I am a Managing Director at FTI Consulting responsible for the telecommunications practice in the Network Industry Strategies group. I hold a Bachelor of Science degree in Electrical Engineering from Auburn University in Auburn, Alabama. I also hold a Masters of Business Administration in Finance from Georgia State University in Atlanta, Georgia.

2. From 1986 through 1987, I was a Research Engineer for General Electric in its Advanced Technologies Department developing high-speed graphics simulators. In 1987, I joined AT&T and, during my career there, held a variety of engineering, operations, and management positions. These positions covered the switching, transport, and signaling disciplines within AT&T. From 1995 until 1997, I worked in the Local Infrastructure and Access Management organization within AT&T. In this organization, I gained familiarity with many of the regulatory issues surrounding AT&T's local market entry, including issues concerning the unbundling of incumbent local exchange company ("incumbent" or "ILEC") networks. I participated on the AT&T team that negotiated with Southwestern Bell Telephone Company concerning unbundled network element definitions and methods of interconnection.

3. From 1997 to 2006 I was President of my own consulting firm, Kaleo Consulting. Kaleo Consulting was a boutique consulting firm specializing in providing expert testimony in technical and financial areas related to telecommunications. My projects involved issues related to contractual terms and conditions between telecommunications service providers, the costs for network elements including interoffice transport, collocation, loops (media used to connect to

customer premises), switching, signaling, and other related areas. My consulting assignments also included the responsibility of negotiating interconnection agreement terms and conditions between new entrants and incumbents or negotiating settlements with numerous companies including AT&T and Verizon. To the extent that these contracts required the inclusion of rates for telecommunications services, I developed and/or evaluated numerous models pertaining to the development of network component costs. Finally, my firm provided strategic consulting services to companies regarding where and how to enter various telecommunications markets. Within the same period, from 1998-1999. I also co-founded and served as President for ALT Communications, a Competitive Local Exchange Company (CLEC) in Texas. In December 2006, I moved to FTI Consulting as a Managing Director and continue to provide consulting services in the telecommunications industry.

4. As part of my consulting practice, I have developed a deep knowledge base regarding regulatory requirements within the telecommunications industry and have provided expert testimony on telecommunications regulation in most states within the United States, before the Federal Communications Commission (FCC) on many occasions, and before the Canadian Radio and Television Commission (CRTC). I have also provided expert testimony in federal court proceedings involving the regulation of telecommunications carriers.

5. Of particular relevance to this present report, I have also had extensive experience in managing a large call center while at AT&T. While the call center was not responsible for serving the hearing impaired, the issued involved with the management of call center personnel, staffing for variations in demand, utilization levels and other common issues for call centers are

part of my direct experience. Moreover, I continue to advise clients on call center operations and cost management approaches.

6. A copy of my curriculum vitae is attached to this report.

B. Overview

7. I have been asked by Purple Communications, Inc. (Purple) to provide my expert opinion regarding the issues raised in the October 15, 2012 *FCC Public Notice*[1] seeking additional comment on proposed video relay services ("VRS") compensation rates. Specifically, I provide my opinion, and support of such opinion, on the "rate structure, proposed rates, and cost calculations, including its weighting of individual providers' costs"[2] proposed in the *Fund Administrator Supplemental Filing*[3] by Rolka Loube Saltzer Associates ("*RLSA Proposal*"). In addition, I provide my opinion and associated support on the five "Open Ratemaking Issues" identified in the *FCC Public Notice*.

8. As I detail below, the proposals in the Fund Administrator Supplemental Filing will serve to decrease rates for non-dominant carriers to such an extent that they will be forced out of business and, as a result, undermine the Commission's goal of increasing competition in the VRS industry. I base this conclusion on the following key factors:

> All evidence supports the fact that VRS costs are volume-sensitive with each and every *independent* data point pointing to the same conclusion:

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1 FCC Public Notice, *Additional Commnet Sought on Structure and Practices of the Video Relay Service (VRS) Program and on Proposed VRS Compensation Rates*, DA 12-1644, Released October 15, 2012 ("*FCC Public Notice*").

2 *Id.*, Section II.A.

3 Supplemental Filing of the Telecommunications Relay Services Administrator Regarding Reasonable Rates for VRS Service, Rolka Loube Saltzer Associates, CG Docket Nos. 03-123 & 10-51, October 15, 2012 ("*RLSA Proposal*").

The largest VRS provider is benefitting from the largest reduction in costs due to historical double-digit industry growth rates;

There appears to be a premise that VRS is a declining cost industry, a premise that is not accurate, even when including a productivity factor;

A single, industry-wide target compensation rate will perpetuate and exacerbate the market dominance of Sorenson, to the detriment of competition and consumers;

The Commission must compensate VRS providers in a manner that allows them to recover their costs as well as provide a return to their investors; and

A traditional rate of return regime is not applicable to the VRS industry, and the Commission would be best served by targeting return components that best mimic the incentives in a competitive marketplace.

9. Therefore, based on my evaluation and the conclusions reached above, the FCC should not implement the Fund administrator's recommendations as outlined in the *RLSA Proposal*.

II. PROBLEMS WITH THE FUND ADMINISTRATOR'S RECOMMENDATIONS

A. The Commission's Previous Orders Have Shown That VRS Costs Are Volume Sensitive.

10. In its *2007 TRS Rate Methodology Order*, the Commission determined that, "[i]n light of these different per-minute costs, we conclude that we will adopt tiered VRS

compensation rates based upon call volume."[4] In that Order, the Commission reviewed "the providers' more recently filed actual (or annualized actual) costs and minutes of use contained in their cost data submission for the 2007-2008 Fund year"[5] and determined that "providers that handle a relatively small amount of minutes ... have relatively higher per-minute costs ... [and] ... providers that handle a larger number of minutes ... have lower per-minute costs."[6] This also led to "some VRS providers ... receiv[ing] compensation significantly in excess of their actual costs"[7] and that in 2006 some "VRS providers' actual cost of providing service ... was $4.5568 per-minute – almost one-third less than the rate paid of $6.644 per-minute."[8] Based on this information, the Commission "base[d] the VRS rate on the providers' projected cost and minutes of use."[9] In short, the Commission unambiguously determined that a VRS provider's cost is subject to economies of scale and that "dominant providers ... are in the best position to achieve cost synergies."[10]

11. Then, in the *2010 TRS Rate Order*,[11] the Commission determined that "[t]he rationale for adopting the tiers in the *2007 TRS Rate Methodology* Order remains applicable; that is, providers with a relatively small number of minutes generally have higher costs."[12] Further,

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4 *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, November 19, 2007, ¶ 48 ("*2007 TRS Rate Methodology Order*").

5 *Id.*, at fn. 143.

6 *Id.*, at ¶ 54.

7 *Id.*, at ¶ 48.

8 *Id.*, at fn. 144.

9 *Id.*, at ¶ 47.

10 *Id.*, at ¶ 53.

11 *Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities*, CG Docket No. 03-123, Order, June 28, 2010 ("*2010 TRS Rate Order*").

12 *Id.*, at ¶ 17.

the Commission presented NECA's proposed rates by tier, which were based on 2009 "actual, historical costs,"[13] after accounting for working capital allowances and expense increases. Comparing the Commission adopted cost-based rates in the *2007 TRS Rate Methodology* and those in the *2010 TRS Rate Order*, reveals that the underlying costs decreased, resulting in rate decreases by 13.7% in Tier 1, by 6.2% in Tier 2 and by 37.5% in Tier 3.[14] In short, that highest volume tier, Tier 3, experienced substantially greater cost-based rate declines than either of the other two tiers.

12. Thus, not only has the Commission determined, through actual data provided by the VRS providers, that those providers with greater volumes tend to have the lowest unit costs, the Commission data has shown that the carriers with the largest volumes continue to experience significant economies of scale as those volumes increase. And, while the volume increase in Tier 1 and Tier 2 are, by definition, limited due to the upper bound in those tiers, Tier 3 has no limit on the potential volume increase. Specifically, the maximum possible volume increase in Tier 1 is 49,999 minutes, the maximum possible volume increase in Tier 2 is 449,999, but there is no limit on the potential volume increase in Tier 3. Indeed, Sorenson experienced increases in the tens of millions of minutes between 2006 and 2009.[15]

13. To be clear, VRS costs are sensitive to overall increases in volume. By way of example, consider a carrier with 250,000 monthly minutes and a carrier with 2,500,000 monthly minutes (i.e., one carrier is ten times larger than the other). While carriers may experience an

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13 *Id.*, at ¶ 6.

14 *Id.*, at Table 1.

15 Overall industry volume increased from about 44 million minutes in 2006 to about 99 million minutes in 2009. Given that today Purple and CSDVRS, the second and third largest providers, account for less than 20 million minutes, at least 30 million of those minutes are likely to be growth in Sorenson's overall volume.

increase in minutes by 50%, the first carrier would only gain 125,000 minutes while the second carrier would gain 1,250,000 minutes (again, ten times as many minutes). As a result, it is the second, larger carrier that would experience the greatest improvements in its economics of scale. The point here is that the economies of scale relate to overall volumes in terms of minutes and not percentage increases (or growth) in a particular company's minutes.

14. Thus, it is not surprising that Tier 3 experienced a 37.5% reduction in the cost-based reimbursement rate between 2007 and 2010 while Tier 1 and Tier 2 carriers experienced only a 13.7% and 6.2% reduction in costs, respectively. And, during this period, only Purple and Sorenson were considered Tier 3 providers capable of garnering more than 449,999 minutes of growth per month. All told, Sorenson experienced the vast majority of the total industry minute growth during this period. As such, it is easy to explain why Sorenson had such a significant decrease in its per-minute costs.

15. In short, not only has the Commission verified that there are significant economies of scale in the provision of VRS services through actual point-in-time data provided by the VRS providers, the Commission data also shows that the largest providers experienced significant economies of scale over time as total market volumes increase.

B. Recent Information Underscores The Fact That The VRS Industry Is Characterized By Significant Economies Of Scale.

16. The *RLSA Proposal* similarly provides information that can be used to estimate the change in costs experienced by the VRS providers from 2010 to 2012. Specifically, the *RLSA Proposal* determined that the "weighted average cost is $3.396 (including accounting for

the federal corporate income tax liability)."[16] At this time. three VRS providers dominate the total industry minutes, Sorenson, Purple and CSDVRS. Therefore, if one knows the three-year weighted average costs and volumes for Purple and CSDVRS, it is relatively straight-forward to back into Sorenson's weighted average cost and minutes. The following table summarizes this data:

Figure 1: Volume and Average Cost per Minute Comparison[17]

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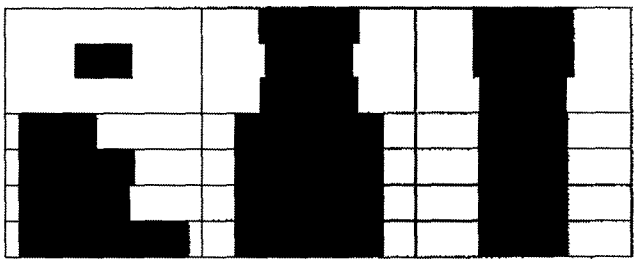

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17. As can be seen from the above table, Purple CSDVRS and Sorenson each have minute volume exceeding 500,000 minutes per month, making them Tier 3 providers. Yet, Sorenson is approximately five times the size of Purple and CSDVRS *combined*. As the Commission recognizes, "one provider has a dominant market share, and thus this individual

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16 *RLSA Proposal* at pg. 5.

17 The total industry data comes directly from the *RSLA Proposal*. Of the industry, Sorenson, Purple and CSDVRS comprise the vast majority of minutes. This analysis conservatively assumes that these are the only three providers in the industry. If data for the other, much smaller providers were available, they would have substantially higher costs than Sorenson. Thus, by including the minutes and costs of the smaller VRS provider's in the Sorenson category, this analysis results in conservatively high per-minute costs for Sorenson. Of course, RLSA and the FCC can easily review the underlying cost information by carrier to validate these positions. All data reflects a three-year weighted-average of the data relied upon RLSA (actual 2010 and 2011 data with projected 2012 data).

dominant provider having approximately 7,000,000 per month (again, about ten times the size as the second and third largest providers in the industry).

20. During its September 13, 2012 ex parte conference with the Commission,[24] Purple presented an analysis showing, based on its own underlying cost data, the economics of scale associated with larger call volumes. At that time, Purple did not have the information subsequently provided in the *RLSA Proposal* to validate its positions, but that information is now available. In short, the Commission has received both the Purple analysis showing anticipated economies of scale at different projected volume levels as well as specific quantitative data from multiple carriers that undoubtedly prove additional economies of scale even within the previously defined "large, dominant providers" category, which was initially set at any volumes exceeding 500,000 minutes per month.

21. There are numerous reasons for the significant economies of scale above 500,000 minutes per month, and, in fact, the potential for economies of scale above 500,000 are even greater than those for companies within Tier 1 or within Tier 2. These economies come from a variety of areas including, but not limited to: (1) significant efficiencies in general and administrative costs (indirect costs), and (2) efficiencies in relay center costs.

22. Every data point suggests that general and administrative costs are the single most significant cost reduction as volumes increase. In particular:

> The *RLSA Proposal* shows that total industry per-minute indirect costs dropped 11.3% between 2010 and 2012, as volumes increased by 8.7%. This reduction of about $0.074 per minute accounted for about one-half of the total

[24] Notice of *Ex Parte* Conference, Purple Communications, Inc., September 18, 2012 ("*Purple Ex Parte Filing*"). This filing included a presentation, the last slide of which was not included in the filling since it contains Highly Confidential Information falling under the *Second Protective Order*.

provider's projected minutes and costs largely determine the rate,"[18] thereby skewing the overall weighted average cost significantly toward Sorenson's underlying costs.[19] Notably, both Purple and CSDVRS have costs approximately 70% higher than Sorenson.

18. Further, the *RLSA Proposal* shows that the Tier 3 providers' cost-based rates decreased from $3.90 in the *2010 TRS Rate Order*[20] to approximately $3.396 per minute in the *RLSA Proposal*,[21] a 12.9% reduction.[22] As before, this reduction is largely based on greater economies of scale in the industry, with volumes increasing from an average of approximately 84 million between 2007 and 2009 to an average of approximately 104 million between 2010 and 2012.

19. As previously noted, the Commission has long recognized that the VRS industry is characterized as an industry that benefits from economies of scale. However, the Commission has historically only recognized these economies between three categories of providers: "small providers (including new entrants); mid-level providers who are established but who do not hold a dominant market share; and large, dominant providers who are in the best position to achieve cost synergies."[23] But, these categories are demonstrably not sufficient to reflect the real-world cost differences, and economy of scale differences, between those providers having approximately between 500,000 minutes per month and 1,000,000 minutes per month and the

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18 *2007 TRS Rate Methodology Order* at ¶ 52.

19 A simple average of the three providers' costs would be $4.479 per minute, about one-third higher than the weighted average cost.

20 *2010 TRS Rate Order* at Table 1.

21 *RLSA Proposal* at pg. 5.

22 Again, had it been possible to remove the data for the Tier 1 and Tier 2 providers, the Tier 3 average cost per minute would have been lower. As such, the 12.9% reduction from the *2010 TRS Rate Order* to the *RLSA Proposal* is likely understated.

23 *2007 TRS Rate Methodology Order* at ¶ 53.

cost decline of $0.143 between 2010 and 2012 (from $3.574 in 2010 to $3.396 in 2012).

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[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[25] Again, this reflects a combined rate for Sorenson and all other carriers. But, the total minutes are heavily dominated by Sorenson and should be a reasonable proxy for Sorenson's specific data.

[redacted]

***** END HIGHLY CONFIDENTIAL INFORMATION *****

23. In short, each and every piece of evidence reveals that general and administrative costs, or indirect costs, benefit from significant economies of scale. Given that these indirect costs constitute 17.0% of industry-wide total costs, as detailed in the *RLSA Proposal*, and are the second-largest cost category after Communications Assistants' (CA) Related Costs, these costs are both significant and demonstrably decline as volumes increase – even for providers with call volumes in excess of 500,000 minutes per month.

24. The reasons for general and administrative cost reductions as volumes increase is relatively straight-forward – many of these costs are relatively fixed. For instance, a VRS provider will have one chief executive officer, one chief technical officer, one chief financial officer, one chief legal officer (or similar positions), despite the total volume of minutes (or market share) of the provider. While it may be the case, although not necessarily, that the compensation for those positions may be higher for larger organizations, these salary increases would not increase in lock-step with volume (*i.e.*, a salary will not double when volume doubles). Similarly, legal and regulatory costs, human resources costs, financial and accounting functions, etc. do not vary directly with volume. Each of these functions, and the resources required to perform these functions, require a base level of investment and expense. Again, while the resources may increase somewhat with volume (or may not), they will not increase in lock-step with volume.

C. The Suggestion That CA Costs Do Not Benefit From Economies Of Scale Is Unfounded And Contradicted By All Available Evidence.

25. Several Sorenson commenters, including Dr. Pelcovitz and Dr. Katz have argued that "providers can attain high efficiency at relatively low call volumes."[26] They have purportedly made such claims based on use of the Erlang-C model.[27] However, neither Dr. Pelcovitz nor Dr. Katz ever explain, assess, or justify the appropriateness of either their assumptions or the Erlang C model in estimating the costs of VRS. While Erlang-C is undoubtedly useful in evaluating the staffing needs of call centers within an organization, it cannot be used to evaluate the staffing levels of different organizations with different call patterns and volumes without carefully adjusting for these differences. And, it is equally essential to understand the well known and documented limitations of the Erlang-C model.

26. First, Erlang-C assumes that sessions are initiated at a constant rate. This is far from the real-world experience where performance, and efficiency, is ultimately dictated by the peak calling situations. Put another way, staffing must be based on the maximum number of active sessions at any time during the day (or staffing during that shift of the day) and the performance levels desired in terms of waiting times and call abandon rates. Assuming a constant rate of session initiation, even over a peak hour, will necessarily understate the known volatility in call volumes within that hour. It would certainly be inappropriate to assume constant call volumes throughout an 8-hour or 24-hour period as has been assumed by Dr. Pelcovitz.[28] Failure to account for these factors, or even acknowledge that they exist, masks the

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26 *See*, for example, Declaration of Michael L. Katz, March 9, 2012, pg. 24 ("*Katz March 2012 Declaration*") and Declaration of Dr. Michael D. Pelcovitz, May 21, 2010, pg. 11 ("*Pelcovitz May 2010 Declaration*").

27 *Katz March 2012 Declaration* at p. 22 and *Pelcovitz May 2010 Declaration* at p. 10, fn. 11.

28 *Pelcovitz May 2010 Declaration at* p. 11 and following.

real-world efficiency that is achieved. As such, the efficiencies depicted in Appendix 2 of the *Pelcovitz May 2010 Declaration* and in Figure 1 of the *Katz March 2012 Declaration* are simply not attainable and, by assuming away the volatility of call session initiations, flattens out the curve that would actually be experienced – making it appear that there is less efficiency gain at the higher portion of the curve.

27. Second, Erlang-C tends to flatten out the curve that would result from a real-world evaluation of call volume because it assumes that there will always be sufficient agents to handle the call volume and that calls are never abandoned. In other words, a call could be waiting for a very long time before it is handled, when that call would likely be abandoned in the real world. This, in turn, tends to create less variation in agent staffing than actually occurs. When combined with the assumption of constant session initiation, Erlang-C is simply incapable of reflecting real-world variations. As a result, many modern uses of Erlang-C are combined with Monte Carlo simulations to produce better results. Given the known weaknesses of Erlang-C, most modern call centers use much more sophisticated staffing models that tend to take into account the inherent unpredictability in call session initiation and in customer behavior.

28. Even more problematic is that, at least as far as the model produced by Dr. Pelcovitz is concerned, Erlang-C is not even used in his calculations despite his claims to the contrary.[29] In reviewing Appendix 2 of the *Pelcovitz May 2010 Declaration*, the second column in each table (identified as "agents") does use Erlang-C modeling. However, he then determines the "total agents required," which, in each and every case, results in a "total agents required" figure that is equal to or greater than the Erlang-C calculations. It is this value, the "total agents

[29] Unfortunately, Dr. Katz did not produce either a model or a table that could be replicated.

required" value that Dr. Pelcovitz ultimately uses for his efficiency calculations. Unfortunately, this calculation has nothing to do with Erlang-C – it is a straight-forward calculation of: [(Calls per hour * Holding Time in Seconds) / Maximum Agent Seconds per hour]. The Maximum Agent Seconds per hour equals the maximum agent utilization (occupancy) assumed to be 50% times 3,600 seconds per hour – which equals an agent being able to handle 1,800 seconds per hours. Thus, take the fist column in Appendix 2, where the assumption is 13.69 calls per hour and an average holding time of 390 seconds (360 seconds plus a 30 second setup time), for a total of 5,339 total seconds. In this case Dr. Pelcovits derives 3 "total required agents" by dividing the 5.339 total seconds by the 1,800 seconds per agent (which equals 2.97 and is rounded up to the next number of agents). Using the very next row, at 30,000 minutes, the 20.53 calls per hour at 390 seconds holding equals 8,007 seconds which, when divided by the maximum utilization of 1,800 seconds per agent, arrives at 5 agents (4.45 rounded up to 5). In short, it is obvious that, while talking about Erlang-C and its use in call center staffing, Dr. Pelcovitz never even utilizes it in his staffing efficiency model.

29. And the problems with this analysis go far beyond not using Erlang-C which, as mentioned above, would be problematic even if it were actually used. Appendix 2 shows that Dr. Pelcovitz calculates something very near a 99% at all volume levels. This is, to be blunt, a contrived calculation and merely reflects the difference between the "rounded up" number of employees assuming full utilization of the 1,800 seconds per hour and the "unrounded" number of employees. So, in the above example at 20,000 minutes, the 99% efficiency factor is simply the ratio of 2.97 agents from the raw calculation and the rounded up requirement of 3 agents (2.97 / 3.00 = 99%). At 30,000 minutes, the 89% efficiency factor is simply the ratio of 4.45

agents from the raw calculation and the rounded up requirement of 5 agents (4.45 / 5.00 = 89%). Again, the claimed efficiency calculation has nothing to do with any actual process to staff call centers. It assumes perfectly even call volumes at every second of every minute of every day of every month in a year. This cannot reflect any real-world situation.

30. But, based on real-world experience and common sense, there is simply no way to ever achieve actual VRS efficiency in the 95% area. The reason that Drs. Pelcovitz and Katz show such a high utilization is that they assume a "maximum agent occupancy" of 50%. There is no basis or support for this input.[30] More importantly, they treat this 50% maximum agent occupancy factor as a maximum occupancy, not an average occupancy. For example, at the extremes, any given agent fluctuates between 100% efficiency and 0% efficiency. Even if, on average, that agent achieves 50% efficiency, this efficiency is measured over a period of time, not at a given point in time (again, which would either be 0% or 100%). Unfortunately, it appears that both Drs. Pelcovitz and Katz are utilizing a hypothetical overall efficiency of 50% as a maximum occupancy over any given time period (in other words, that a given agent will handle 1,800 seconds of calls per hour, each and every hour of that agent's shift). But, this is clearly not the case. An individual agent may experience significantly higher occupancy during the peak busy hour and significantly lower occupancy during a slower time of the agent's shift.

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[30] Drs. Pelcovitz and Katz do not appear to have done any independent efficiency analysis. Rather, they reference a 2009 GoAmerica filing in which a "similar model of trunking efficiency" was provided and where GoAmerica apparently stated that VRS efficiency is "capped [] at 50 percent in order 'to avoid repetitive stress injuries.'" [*Katz March 2012 Declaration* at p. 23, fn. 58.] But, GoAmerica never asserted that there was a 50% cap on VRS efficiency. Rather, the GoAmerica filing was being used to demonstrate that higher call volumes do yield a much more productive agent occupancy and, by having a large number of very small competitors, those call centers would be inefficient and yield inefficient use of a limited supply of interpreters. GoAmerica never suggests that the 50% efficiency factor it used was anything more than a hypothetical average utilization for illustrative purposes. For this very reason, GoAmerica said "[o]ther input assumptions would yield results similar to, although obviously not identical to, that set forth in the example" – because its inputs were only intended to be illustrative, not accurate. [*GoAmerica Comments at* p. 5, fn. 3.]

On average, that hypothetical agent may experience 50% occupancy, but the actual occupancy during any given period may fluctuate from 0% when idle to 100% when active. to 95% over a 30 minute period to 75% over an hour period, to much less. In short, it is demonstrably wrong to suggest that a VRS staff would ever be able to achieve 50% occupancy both in the busy hour and during the slow hour.

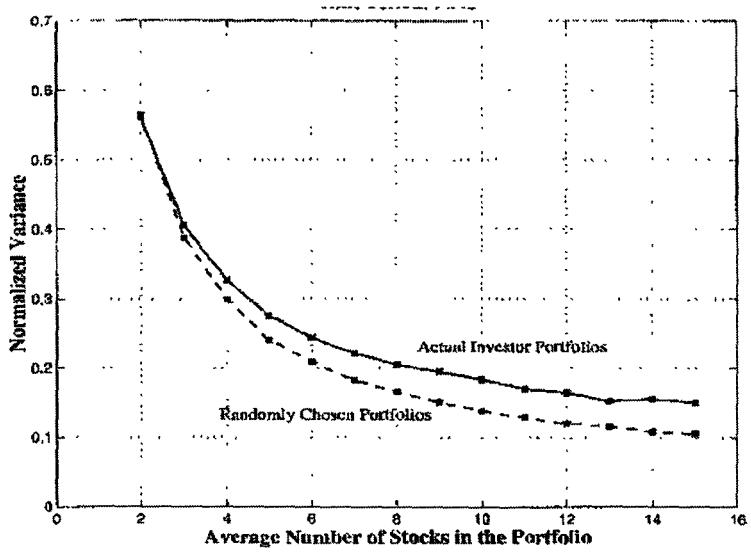
31. Perhaps the most significant problem about using a 50% occupancy assumption and assuming that this level of utilization must occur evenly at every point throughout the day is it removes all of the call initiation volatility from the evaluation of staffing levels. By doing so, this assumption eliminates the factors associated with volatility smoothing as a function of increased volume. Put another way, Erlang-C and similar analyses will not fully reflect the true decrease expected to be realized in CA costs as volume increases. First, while Commission rules require that VRS providers answer 80% of calls within 120 seconds, 24 hours per day, seven days a week, competitive pressures require the fastest response times (*i.e.*, slower response times will lead to a loss of customers and lower volumes, thereby increasing unit costs). As such, efficient staffing is a significant driver of labor costs. And, efficient staffing (meaning higher utilization) is more achievable with a larger volume of calls. From my experience performing traffic studies in regulatory proceedings and while an employee at AT&T, traffic during the busy hours is often as much as 12 times higher (or even higher) than traffic that occurs in lower use periods of the day. Staffing levels must be set to meet the performance thresholds desired during those busiest times of the day. However, from my experience, when you have higher volumes of traffic, it is easier to smooth these peaks out over the staffing that you have available because the

larger volume of traffic makes the predictability within the peaks more stable as illustrated further below.

32. This specific situation is analogous to the measurement of volatility of stocks and portfolios – measurement of the standard deviation of the change in a stock's price. As most sophisticated investors realize, volatility is a key measure of risk associated with a particular stock or portfolio (*i.e.*, the more volatility, the riskier the stock or portfolio). Thus, as a stock's price may change both within a given day and from day to day, so will the call volumes in any given call center. As such, the volatility in call volume leads to inherent risk in staffing a call center.

33. While volatility is unavoidable, there are ways to reduce the risk associated with volatility. In the financial world, the measurement of Beta (β) is often used to estimate the relative risk of a given stock or portfolio to the market as a whole. Without getting into too much detail in the particular workings of the market or the calculation of Beta (β), the purpose is to gauge the covariance (the correlation of two random variables) of a particular stock or portfolio as compared to the overall market return. A Beta (β) of one indicates that the stock or portfolio returns change in direct correlation to the returns of the overall market. A Beta (β) of less than one the stock or portfolio is less risky than the market and a Beta (β) of greater than one indicates that the stock or portfolio is more risky than the market. But, the more relevant discussion is that the larger the portfolio of stocks (*i.e.*, the more diversification), the more the Beta (β) of the portfolio will approach one and have the same risk as the overall market. And, as such, it is possible to reduce the overall variance in return on investment.

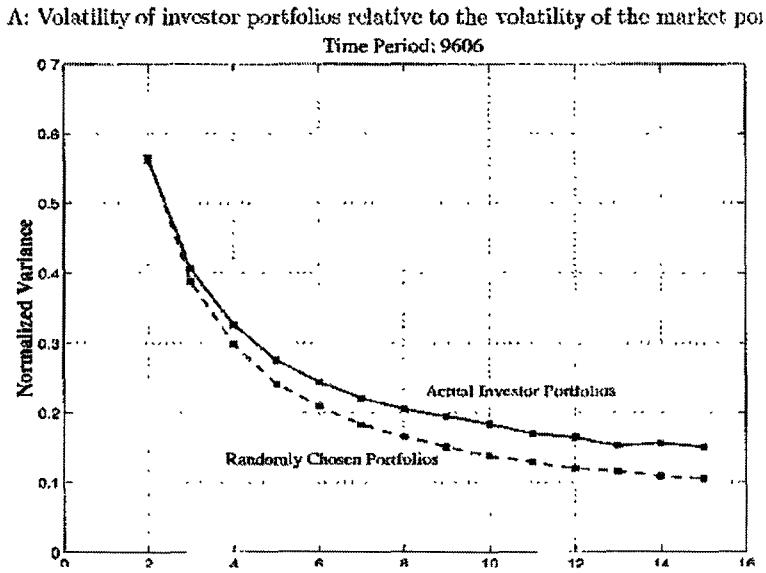
Figure 2: Volatility of Portfolios to the Market[31]



34. Similarly, the larger the volume of calls a VRS provider has, the more that provider's call patterns will reflect the call patterns of the overall market.

[31] *Equity Portfolio Diversification*, William N. Goetzmann. School of Management, Yale University and Alok Kumar, McCombs School of Business, University of Texas at Austin, The Author 2008, Oxford University Press, March 28, 2008, p. 441. The only intended purpose of this graph is illustrate the normalization of variance as the number of stocks in a portfolio inceases.

Figure 3: Normalized Variance Of Portfolios to the Market[32]



35. As such, and as illustrated in the above chart, the larger the volume, the more that provider's call patterns will reflect the call patterns of the overall market and the less variance will be experienced. This does not necessarily reduce the volatility of the call volumes in a day or from day to day, but it will, on average, reduce the risk associated with having a smaller number of call minutes. Ultimately it is the staffing level during the peak load that dictates the staffing levels overall and the more predictable those peak loads are, the more efficient (*i.e.*, higher utilization) will be a provider's CA staff.[33]

36. The *RLSA Proposal* shows that total industry per-minute indirect costs dropped 11.3% between 2010 and 2012, as volumes increased by 8.7%. This reduction of about $0.074

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32 *Id.*

33 *See, Katz March 2012 Declaration* at p. 21. "Firms that process larger volumes are able to take greater advantage of statistical averaging to smooth out the stochastic variation in their traffic volumes." But, while correctly identifying these facts, Drs. Pelcovitz and Katz utilize a model that eliminates these very factors, assuming constant rate of session initiation, no abandonment, and the same variance whether at Purple's volumes or at Sorenson's volumes.

per minute accounted for about one-half of the total cost decline of $0.143 between 2010 and 2012 (from $3.574 in 2010 to $3.396 in 2012).

***** BEGIN HIGHLY CONFIDENTIAL INFORMATION *****

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***** END HIGHLY CONFIDENTIAL INFORMATION *****

38. In addition, independent research and analysis confirms that call volume is a key determinant of economies of scale. For example, in an issue paper recommending best practices for call center staffing, the North American Quitline Consortium (an industry group focused on promoting best practices for call centers staffed with counselors to help callers with issues such as smoking cessation) states:

> Another factor that has a major impact on staffing is the size of the center or the agent group. Centers handling large volumes of calls will naturally be more efficient than smaller groups. This is due to the economies of scale of large groups.
>
> As highlighted in the example below, doubling the call volume does not require two times the number of staff to meet the same service goal of 80% in 20 seconds. When call volume increases eight times, only about six times the number of staffers is needed. As the volume grows, the staff-to-workload ratio gets smaller and smaller.
>
> *The reason for these increased efficiencies and the lower staff-to-workload ratio is simply that with a higher volume of calls, there is a greater likelihood that when an agent is finished with a call, there is another call for that agent to handle. With a bigger volume, each person has the opportunity to process more*

> *calls each hour. Each person spends less time in the available state, waiting for a call to arrive, and not as many agents are needed because each person handles more calls.*[34]

39. Finally, the Commission must recognize that there are other, perfectly valid reasons that two different providers may have very different cost structures. The fact that there are multiple competitors with different business plans is, in itself, an indicator that the industry players are competing in a way that mimics the way a competitive market would reach. At this point in time, Sorenson undoubtedly dominates the market. It has more marketing budget, outreach budget, and research and development budget. Smaller providers, such as Purple and CSDVRS must try to gain market share through other strategies. Many industries exhibit this characteristic and smaller players that cannot compete on costs compete based on factors such as quality of service and customer service. As such, factors such as average response time, quality of interpreters and labor rates for such interpreters, may very well result in a higher cost structure for some competitors than for others. This result is not indicative of an ineffective or uncompetitive industry – rather, it is reflective of a competitive industry in its growth and development where the service has not been commoditized.

40. Thus, in addition to the largely intuitive notion that general and administrative costs decrease on a per-unit basis as volumes increase (an intuitive notion that is supported by a myriad of data points), call centers also experience economies of scale and those economies result in improved utilization of employees and lower per-minute costs of VRS providers. Industry participants have postulated a variety of hypothetical models that question the extent of

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[34] NAQC. (2010). Fundamentals of Call Center Staffing and Technologies. Quality Improvement Initiative (Reynolds, P.). Phoenix, AZ, p. 12 (*emphasis in original*).

the economies of scale in the VRS industry, but none of the participants have even attempted to correctly use the Erlang-C model with inputs supported by actual data. And, none of these providers have put forth any explanation as two why all actual data shows significant economies of scale – whether comparing smaller providers to Sorenson or whether comparing Sorenson at its current volumes to Sorenson at much lower volumes.

41. However, Drs. Pelcovitz had Katz have postulated two theories to support a potential reason for the realized economies in scale. First, Dr. Pelcovits explains that "[t]he textbook model of a firm's costs function depicts a "U" shaped cost curve."[35] He bases this conclusion on three reasons, two of which either do not apply or are largely irrelevant in the cost curve. In particular, Dr. Pelcovitz does not explain which production costs, such as factories, may be difficult to expand or how buying in bulk would apply to the VRS industry. But, more importantly, while the VRS industry may experience a U shaped cost curve, such a curve is not likely to cause an increase in costs at the volumes exhibited by these companies (there are many, much larger call centers providers that deal with much larger volumes than those at issue here). And, at the same time, Dr. Pelcovitz notes that Sorenson does not experience many of the pitfalls of other industries because it can readily establish new call centers to avoid a shortage of its inputs (interpreters).

42. More problematic is the suggestion that "[t]o 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."[36] This statement is baseless, unsupported, and highly suspect. In order to believe this, one would have to believe

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35 *Pelcovitz May 2010 Declaration* at p. 7.

36 *See, Katz March 2012 Declaration* at p. 17.

that both Purple and CSDVRS, competitors of each other with similar volumes and similar cost structures, both have equally ineffective or inadequate management. That is highly unlikely. Rather, a much simpler explanation can be seen by actual data – both between competitors at different volume levels and by Sorenson's own experience as its volumes have increased. Given that the Commission's cost-based rates for the third tier, which is overwhelmingly based on Sorenson, decreased from about $6.30 in *2007 TRS Rate Methodology* to $4.51 in its *2010 TRS Rate Order*, a 28.4% reduction, it seems clear that Sorenson experienced substantial cost declines as its own volume increased. Then, the Commission found that the weighted-average cost-based rate decreased to $3.396 (another 33% reduction) in the *RLSA Report*. In light of these extraordinary reductions in the industry cost-based compensation rates, and in the face of substantial overall industry growth, it is incomprehensible that one could write these off as being the result of "management decisions."

D. Given The Fact That There Are Such Significant Economies Of Scale, With The Largest Carriers Achieving The Largest Reduction In Per-Minute Costs, There Is No Basis To Use A Single Weighted Average Industry Cost-Based Rate To Calculate A Reduction To Existing Rates.

43. The single largest problem with the *RLSA Proposal* is that it contemplates using a single, industry-wide cost as a basis for adjusting the current rates of all VRS providers. All of the information available shows that this methodology makes no sense and will harm all VRS providers other than Sorenson and will help Sorenson – essentially exacerbating the problem of having one carrier dominate the market.

44. For starters, the *RLSA Proposal* recommends that the Commission "reduc[e] the current VRS rates by one-third of the difference between the current rate and a three year

weighted average [overall-industry] cost."[37] But, as mentioned before and further supported above, the Commission recognizes that "one provider has a dominant market share, and thus this individual provider's projected minutes and costs largely determine the rate."[38] As such, what RLSA is really proposing is that the rate for all VRS providers should be reduced by one-third toward Sorenson's costs. Of course, this would ensure that Sorenson is able to earn a return with its cost structure, but any carrier with a higher cost structure (meaning all other providers in the industry) will be adversely affected. In fact, the *RLSA Proposal* has the result of reducing both the Tier 1 and Tier 2 rates by $0.95 but only reducing the Tier 3 rates by $0.56, roughly 60% of the reduction in the Tier 1 and Tier 2 rates.[39] And, this larger proposed reduction in the Tier 1 and Tier 2 rates is being made without any information or evidence suggesting that the Tier 1 and Tier 2 providers have experienced greater cost reductions than the Tier 3 providers.

45. At the same time, the *RLSA Proposal* identifies that there is "substantial turn-over in firms providing VRS."[40] The staffing levels of the largest three providers, Sorenson, Purple and CSDVRS, have remained constant during this time. Thus, this turn-over identified by RLSA is occurring in the smaller firms, which suggests that they are not profitable. Using a target industry-wide rate that predominately reflects the costs of the largest and most efficient provider will make it nearly impossible for smaller competitors to survive.

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37 *RLSA Proposal* at 6.

38 *2007 TRS Rate Methodology Order* at ¶ 52.

39 This translates into a 15.2% reduction in Tier 1 and Tier 2 rates compared to only an 11.0% reduction in Tier 3 rates. However, the dollar reduction is the more meaningful metric in this instance because what really matters to these carriers is the dollar reduction in the per-minute compensation.

40 *RLSA Proposal* at 6.