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CARL J. KUNASEK
Chairman
JIM IRVAN
Commissioner
WILLIAM A. MUNDELL
Commissioner

IN THE MATTER OF US WEST)
COMMUNICATIONS, INC.'S)
COMPLIANCE WITH SECTION 271)
OF THE TELECOMMUNICATIONS)
ACT OF 1996)

Docket No. T-00000B-97-0238

US WEST'S PROPOSAL FOR
ASSURANCE PLAN

INITIAL COMMENTS OF Z-TEL COMMUNICATIONS, INC.

Z-Tel Communications, Inc. ("Z-Tel"), by its attorneys, hereby submits its comments in response to Commission's July 14, 2000 request in the above-captioned proceeding.¹ The Commission invited interested parties to respond with initial comments regarding a proper Performance Assurance Plan ("PAP") for U S WEST ("USW"). Comments were specifically to address USW's initial June 30th submission of a PAP outline.²

I. INTRODUCTION

Z-Tel is a Tampa, Florida-based integrated communications provider that offers local, long-distance, and enhanced services to *residential* consumers in Massachusetts, New York, Pennsylvania, and Texas. At present, Z-Tel serves over 170,000 residential end users in

¹ The Request for Comments was made at conclusion of the First Workshop on Qwest's Quality Assurance Plan which was held on July 13th and 14th.

² *US West's Proposal for Assurance Plan*, Docket No. T-00000B-97-0238, Filed June 30, 2000.

these states. Z-Tel has recently begun providing testing with a limited number of residential consumers in Georgia, and hopes to begin providing service throughout Georgia shortly. Z-Tel delivers its telecommunications service to residential customers over the unbundled network element (“UNE”) combination known as the UNE Platform. Z-Tel provides the long distance and enhanced services portion of its package. Z-Tel plans to begin testing and limited entry into the Arizona residential market in the 4th quarter of 2000.

II. THE USW PAP PROPOSAL IS INCOMPLETE

At its best, the USW is an outline of a performance plan. It does not contain much of the information required to develop a true assessment of its ability to provide the necessary backsliding protection to assure true competition in the Arizona telecommunications market. Without the necessary “meat around the bone,” USW’s PAP does nothing to protect the interests of Arizona consumers from the monopoly interests and self-protection actions of USW. In light of prior actions of USW in regard to consumer interests, the Arizona Commission must make sure any performance plan is fully documented with all positions and requirements clearly stated in language that cannot be misinterpreted before any such plan is fully adopted.

The list of deficiencies in regard to the proposed PAP clearly exceeds the minute amount of specificity offered by USW. The PAP is somewhat unique among plans presented in other states where Z-Tel operates in that no penalties are specified within the plan for discriminatory treatment on the part of USW. Furthermore, only vague references are made to the definitions of the metrics, which are to be critical to the plan. While a list of performance “modules” are mentioned in USW’s filing, their plan gives no indication as to what role these “modules” will play in identifying and penalizing discriminatory treatment or prescribed. While very “liberal” performance ranges are proposed by US West, no basis for the establishment of

these ranges nor any discussion of how these ranges relate to “parity” as required in the Telecommunications Act of 1996 are included. Furthermore, no mention is made of the fact that the proposed statistical test of USW would result in hiding discrimination on the part of USW.

Basically, USW is asking the Arizona Commission to buy a “pig in a poke” as it relates to a PAP. Everything within the plan proposed by USW is left subject to development or interpretation. This Commission must resist the urgings of USW to develop a PAP as competition develops in Arizona. Instead it must take the steps necessary to develop a logical and meaningful PAP which will fully identify and penalize discriminatory treatment by USW.

III. THE NUMBER OF MEASURES PROPOSED US WEST FOR INCLUSION IN A PAP ARE GROSSLY INADEQUATE

The metrics included in USW’s proposed PAP are inadequate and may have the impact of diminishing the quality of service provided to Arizona citizens. In addition, the inadequacy of the metrics included and the lack of a means of resolving disputes will likely have the impact of increasing costs for all market participants. An inadequate PAP could also have the impact of limiting competition in Arizona and of denying Arizona citizens the cost savings and service enhancements that can accrue from robust local competition. There have been documented important instances where non-parity performance on the part of an ILEC has resulted in a lower quality of service for those consumers wishing to take advantage of the benefits offered by a competitive local telephone market. One of the most common problems has been delays in provisioning lower-cost CLEC service due to order processing problems on the part of incumbents. Such situations make the CLECs appear less professional and reliable, and create the impression the competitive market is not adequately monitored and controlled by regulatory authorities.

A. THE MEASURES PROPOSED BY USW ARE NOT SATISFACTORY

A PAP should include metrics that are sufficient to detect and deter below-parity behavior, in terms of the type of activity measured, the definitions and measurement methodology used, the statistical tests applied, and the reporting generated. The plan should also include penalties sufficient to strongly encourage an ILEC provide competing carriers with parity performance. If non-parity performance is detected, the penalties should be automatic and of an amount sufficient to ensure rapid correction of problems. The quality of the metrics and reports should be sufficient to discover and correct both intentional and unintentional non-parity conditions.

The measures included in USW's proposed performance plan would not achieve the above-mentioned results. Instead, when non-parity, customer-affecting performance occurs, the primary tool available to CLECs will be to attempt to enforce interconnection agreements. This will involve costly discovery on the part of the CLEC to obtain internal USW data concerning the quality of service it provides itself, its customers, or its affiliates. If this discovery can be done, an enforcement case can take more than one year to complete. From another perspective, if the Commission becomes concerned about a market or customer impacting condition, the Commission will have to engage in time consuming and costly discovery, and perhaps engage in a process to hear all sides of the issue.

B. SEVERAL CRITICAL AREAS OF INCUMBENT PERFORMANCE ARE NOT COVERED IN USW'S PLAN

Z-Tel strongly believes that the US West PAP does not include a number of performance measures which are essential to supporting CLEC entry into Arizona's market. Of

particular concern is that the measures proposed by US West do not include critical functionality required by CLECs who may be entering the market via a UNE-P strategy. While Z-Tel supports the development of a PAP incorporating a much larger set of metrics as discussed below, to facilitate the Commission's review of USW's proposal, Z-Tel has included as Attachment 1 a listing of measures Z-Tel considers important for a CLEC using UNE-P to deliver service to customers in high quality manner which comports with the end-user service quality standards employed by many states.

C. Z-TEL SUPPORTS UTILIZATION OF THE PACKAGE OF PERFORMANCE MEASURES PRESENTED BY THE REGIONAL OVERSIGHT COMMITTEE OR IN THE ALTERNATIVE THE PERFORMANCE MEASURES ADOPTED BY THE NYPS SC AS THE BASIS OF THE PAP IN ARIZONA

The performance measures included in Z-Tel's Attachment 1 represent a minimum of measures necessary to ensure the USW provides adequate service to a CLEC using UNE Platform to serve customers. However, Z-Tel advises utilization of the package of performance measures developed by the Regional Oversight Committee. In the alternative, the performance measures adopted by the New York Public Service Commission for Bell Atlantic–New York (“BA-NY”) should be adopted.

Z-Tel also advocates a regional approach to development of the metrics and methodologies to be included in Arizona's performance assurance plan. Z-Tel presents this argument in the interest of efficiency on the part of regulatory oversight and market participant involvement in the development and implementation of the plan.

D. A MECHANISM TO ADDRESS NEEDED REVISIONS TO PAP METRICS SHOULD BE ADOPTED PRIOR TO PAP IMPLEMENTATION

The metrics included in the PAP must be flexible enough to allow refinement as market conditions require. The only way to ensure proper market-based refinement is to ensure that the CLECs doing business in a market have input into metrics definition and analysis. Experience in New York shows that this may best be accomplished through a continuing strong role by regulatory agencies, which is essential to nurturing and sustaining a competitive market. Therefore, Z-Tel believes individual state Commissions should retain the right to impose additional measures and penalties if needed to address problems in their particular state. Conversely, if measures are to be deleted from the regional performance assurance plan, Commissions should attempt to work together to do so on a regional basis.

The New York Public Service Commission retained control over the PAP, in terms of the metrics included in the plan and the overall penalty structure. As a result, the Commission has the flexibility to refine metrics as needed given the evolution of the market. The New York Public Service Commission also has the ability to increase the weights of certain metrics or to increase penalties. In fact, in approving BA-NY's Section 271 application, the FCC specifically cited this ability as important.³

Finally, Z-Tel believes that any PAP should include a strong system of internal controls to proactively ensure accuracy and accountability of metrics data and penalty computations. To compliment these internal controls, the performance assurance plan should also include provisions for meaningful external audits. Such audits should be overseen by

regulators and should include active participation by both USW and CLECs, to ensure proper and reasonable scoping and problem resolution.

IV. PAP MODULES MUST BE MODIFIED TO SPECIFICALLY ADDRESS UNE-P

The proposal submitted by USW is unclear as to how it will ensure parity performance for CLECs using UNE-P to serve customers in Arizona. Z-Tel, a company which uses the Platform to focus on the residential market, believes that this places residential customers at risk for the problems that arise when non-parity performance is provided to carriers using the Platform. For example, below parity performance in terms of installation timeliness or mean time to repair outages hurts end-users as well as Z-Tel's ability to serve those users.

Z-Tel believes that separate measures for UNE-P are essential to properly capturing true performance. It is likely that residential, and particularly rural, customers will be most likely to obtain choice through Platform based carriers. In addition, new carriers entering the Arizona market may make the traditional means of ensuring end-user service quality less effective and more difficult for regulators to implement. Therefore, Platform specific measures may provide regulators with a new and valuable tool to monitor and impact end-user service quality and thus to protect the most vulnerable class of customer.

V. ANY PAP MUST ADDRESS HOW DATA WILL BE ACCUMULATED TO THE MODULE LEVEL

A fundamental flaw of the USW's proposed performance assurance plan is that it accumulates data at a high level. Such an accumulation serves to mask specific, customer-

³ See *Application by Bell Atlantic New York for Authorization Under Section 271 of the Communications Act To Provide In-Region, InterLATA Service in the State of New York*,

effecting problems in a sea of data. For example, when all data is lumped together, good performance in high-volume, simple transactions can serve to mask poor performance in lower-volume, complex transactions. Therefore, Z-Tel advocates disaggregation of metrics and data to be included in the performance assurance plan.

Disaggregation involves breaking down performance data in specific categories so that meaningful parity comparisons can be made. For example, pre-order and order disaggregation should be required by interface type, pre-order query type, product type, and service order type. Maintenance and repair measures should be similarly disaggregated. This will allow market participants and regulators to focus their attention on problems, rather than having to work to identify specific problems areas in response to specific complaints.

VI. ESTABLISHMENT OF APPROPRIATE FINES IS CRITICAL TO ANY EFFECTIVE PAP

The FCC has clearly stated the importance of an effective PAP in regard to providing proper incentives for ILEC compliance with the provisions of the Telecommunications Act of 1996. In its Orders approving the Section 271 Applications of Bell Atlantic in New York and Southwestern Bell in Texas, the FCC has reviewed proposed plans to ensure that self-executing remedies contained within the plans of those entities offer sufficient disincentives to deter anti-competitive behavior on the part of the ILEC. A key element of both reviews was the amount of “total liability at risk” within the PAPs. The FCC has repeatedly stated that financial penalties must be sufficient to represent a meaningful incentive for the ILEC to provide a high level of wholesale performance.

Memorandum Opinion and Order, CC Docket No. 99-295, ¶ 437 (rel. Dec. 22, 1999).

A. PENALTIES MUST BE SET AT A LEVEL WHICH WILL INCENT NON-DISCRIMINATION

The true purpose of any PAP is to establish a mechanism to identify and deter discriminatory treatment. To act as a deterrent, it is imperative that any penalties imposed under the PAP be of such a magnitude that the measured party receives no financial gain from engaging in monopolistic behavior. To that, Z-Tel believes that the level of financial penalties must be tied to the amount of money which a party such as USW could leverage from consumers if it engages in monopoly behavior. Z-Tel separately submits as Attachment II (*Statement of George S. Ford on Behalf of Z-Tel Communications, Inc.*) its views on the level of penalties which should be considered by the Arizona Commission.

B. PAP PENALTIES MUST BE USED TO COMPENSATE IMPACTED COMPETITORS

Within its plan, USW proposed a two-tier plan whereby certain penalties are paid to CLECs and other penalties are paid directly into a state universal service plan. USW justifies this split in payment based upon the nebulous assertion that such a split would eliminate any CLEC incentive "... to use the plan as a financial windfall or to subsidize their business." Z-Tel opposes USW's proposal to develop a "two-level" plan.

What USW's two-tier plan fails to recognize is that in a properly developed PAP, the amount of fines paid by USW will be directly related to the severity and repetitive nature of the discriminatory activity. Large fines will occur where extensive and repetitive discrimination has happened. In these instances, the CLECs and their shareholders are the ones that will have been hurt by USW monopoly practices. In such instances, the fines do not represent a "financial windfall" or a "subsidy" but instead seek to reimburse them for profit which they could have obtained in a free and open market. In this manner the fines should be viewed as the proper

mechanism to compensate them for sabotaged business opportunities. Without full payment to the involved CLECs, US West will stand to gain further advantage within the marketplace based upon the weakened financial condition of the CLECs operating in Arizona.

C. RELIANCE SOLELY UPON STATISTICAL ANALYSIS TO ESTABLISH WHEN PENALTIES APPLY IS NOT APPROPRIATE

USW proposes utilization of statistical measures within its PAP as the basis of determining if performance penalties are applied. For use in this manner, USW suggest utilizing the “Z” score in association with statistical tests at the 95% and 99% confidence levels. It appears that US West intends to utilize the Z score to determine whether the discriminatory behavior is treated as “Level 1” or a “Level 2” act for penalty purposes.

What the Commission should understand is that from a statistical standpoint, the Z score test is only relevant in determining whether or not discrimination has occurred. It is not relevant in trying to ascertain the nature, severity or the importance of the discriminatory act. In other words, the Z score does not appropriately measure degree of discrimination. In fact, from a practical standpoint, Z score statistics in New York have appeared to vary more in relation to the sample size rather than to the degree of discrimination.

Because the Z score cannot be reliably used to determined the degree and importance of the discriminatory treatment, it is imperative that the Commission not use any Z statistics to directly calculate performance penalties. Actual penalties should be weighted in regard to the importance of the measure element to CLEC operation and should be tied to the degree of discrimination not the Z statistic.

D. PENALTIES SHOULD BECOME MORE STRINGENT AS REPEATED MISSES OCCUR

Hidden within USW PAP is a perverse proposal to only apply Level 1 penalties in instances where discrimination has occurred in three consecutive month. This proposal would literally allow USW to discriminate eight months of the year without penalty. Such a plan cannot be condoned.

Instead, penalties must be initiated at the first sighting of discriminatory treatment. Allowing USW to avoid penalties would only incent them to forgo the necessary “root cause” analysis and implementation of the necessary correction mechanisms. Initial fines for minimal discrimination can be set at such a level as to not impose a financial hardship in the instance where the discrimination is random and relatively inconsequential.

Where even minor infractions continue over time, the penalties must be fashioned in a manner that increased the financial consequences over time. Where USW does not institute immediate corrective action, intent to discriminate must be assumed and fines multiplied. Only in this manner can US West be provided with the incentives to act in the procompetitive manner required under the Telecommunications Act of 1996 and the rules of this Commission.

E. PENALTIES SHOULD VARY WITH THE SEVERITY OF ANY MISSES

Within its proposed PAP, USW does not progress from the establishment of Level 1 and Level 2 violations to the point establishing fines in association with any measure. Z-Tel fully believes that any properly developed PAP must move beyond the development of Z statistics as the basis of determining fines. Instead of basing fines directly on the Z statistic, Z-Tel supports the use of the Z statistic only to determine whether discrimination has occurred.

Once that determination has been determined, the Z statistic should be discarded and the fine should be based upon the level of discrimination which occurred. Generally, large differences in performance should equal large fines. Small differences in performance which do not materially impact CLEC operations or the CLEC's ability to enter the market would correspondingly result in minimal penalties.

VI. CONCLUSION

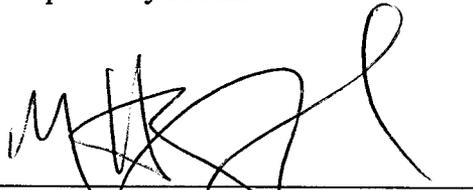
Z-Tel fully believes that the Arizona Commission should adopt a strong PAP which is fully documented and understood by all parties: USW, CLECs, and consumers. Such a plan must strive to identify and document any broad scale acts of discrimination on the part of USW. Identification of such acts should result in immediate and appropriate penalties. Such penalties should vary based on whether the discrimination is repetitive along with the severity of the discriminatory acts.

It is important to note that USW is in no way disadvantaged by development of a PAP which includes significant financial penalties. Under an appropriate plan, USW will pay penalties of any significant magnitude only if it acts in a discriminatory manner. As long as USW operates in an appropriate manner within the infamous "level playing field," any financial penalty from statistical anomalies will be insignificant. Quite bluntly, if USW doesn't play by the rules, it should be heavily penalized. If it plays by the rules, even a severe PAP would not impact its financial operations.

As Z-Tel has just begun targeting the Arizona market for entry, we have not been a full participant in proceedings leading up to the Commission Workshop of July 13th and 14th. Due to the lack of opportunity to fully review the record to date in this endeavor, Z-Tel leaves

open the opportunity for it to submit further comments as well as a Z-Tel-proposed PAP in the future.

Respectfully submitted

A handwritten signature in black ink, appearing to read 'Jonathan E. Canis', written over a horizontal line.

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Attachment 1

Z-Tel Communications, Inc.

Listing of Critical Metrics to be Included in

US West's Performance Assurance Plan

The metrics listed in this Exhibit are taken from *Qwest Service Performance Indicator Definitions (PID) ROC 271 Working PID Version 1.3*, July 5, 2000. Z-Tel advocates using these measures as a minimum, including the definitions and disaggregation specified in the document from which the measures were taken.

Electronic Gateway Availability

GA-1 – Gateway Availability – IMA-GUI

GA-2 – Gateway Availability – IMA-EDI

Pre-Order/Order

PO-1 – Pre-Order /Order Response Times

PO-2 – Electronic Flow-through

PO-3 – LSR Rejection Notice Interval

PO-5 – Firm Order Confirmations (FOCs) On Time

PO-6 – Work Completion Notification Timeliness

PO-7 – Billing Completion Notification Timeliness

PO-10 – LSR Accountability

PO-15 – Number of Due Date Changes per Order

Ordering and Provisioning

OP-3 – Installation Commitments Met

OP-4 – Installation Interval

Maintenance and Repair

MR-2 – Calls Answered within 20 Seconds-Interconnect Center

MR-3 – Out of Service Cleared within 24 hours

MR-4 – All Troubles Cleared within 48 hours

MR-7 – Repair Repeat Report Rate

MR-8 – Trouble Rate

Billing

BI-1 – Time to Provide Recorded Usage Records

BI-3 – Billing Accuracy – Adjustments for Errors

BI-4 – Billing Completeness

Directory Assistance

DA-1 – Speed of Answer – Directory Assistance

Operator Services

OS-1 – Speed of Answer – Operator Services

**BEFORE THE
ARIZONA CORPORATION COMMISSION**

IN THE MATTER OF U S WEST)
COMMUNICATIONS, INC.'S) Docket No. T-00000B-97-0238
COMPLIANCE WITH § 271 OF THE)
TELECOMMUNICATIONS ACT OF)
1996)

ATTACHMENT 2

**STATEMENT OF
GEORGE S. FORD
ON BEHALF OF
Z-TEL COMMUNICATIONS, INC.**

July 21, 2000

I. INTRODUCTION

My name is George S. Ford. I am the Chief Economist for Z-Tel Communications, Incorporated ("Z-Tel"). My business address is 601 South Harbour Island Boulevard, Suite 220, Tampa, Florida 33602. I received a Ph.D. in Economics from Auburn University in 1994. My graduate work focused on the economics of industrial organization and regulation, with course work emphasizing applied price theory and statistics.

My professional background covers work experiences in private industry and the Federal Communications Commission ("FCC"). My last place of employment before Z-Tel was with MCI Worldcom where I served as a Senior Economist in the Law and Public Policy group. MCI Worldcom's Law and Public Policy group is responsible for developing MCI Worldcom's public policy positions for both federal and state regulatory proceedings. The economic staff in this group also assists MCI Worldcom's business units in assessing the financial impact of various regulatory reforms and evaluating business decisions and prospects. While at MCI Worldcom, I filed declarations and economic studies on a variety of topics with both federal and state regulatory agencies.

Prior to MCI Worldcom, I served as an Economist at the FCC in the Competition Division of the Office of the General Counsel. The Competition Division of the FCC was tasked with ensuring that FCC policies were consistent with the goals of promoting competition and deregulation across the communications industries. In this role, I advised the FCC's various bureaus on a wide range of issues and participated directly and indirectly in proceedings across the entire scope of the FCC's jurisdiction including, but not limited to, domestic and international telecommunications, multi-channel video, broadcasting, computer interference standards, and the implementation of the Communications Act of 1934, as amended ("Act").

In addition to my professional experience described above, I am an Affiliated Scholar with the Auburn Policy Research Center at Auburn University in Alabama. Through this professional relationship, I have maintained an active research agenda on communications issues and have published research papers in a number of academic journals. I regularly speak at conferences, both at home and abroad, on the economics of telecommunications markets and regulation.

Z-Tel is a Tampa-based, integrated service provider that presently provides competitive local, long distance, and enhanced services to residential consumers in Massachusetts, Pennsylvania, New York, and Texas. Z-Tel plans to expand nationally as the unbundled network element platform (“UNE-P”) becomes available at TELRIC rates. At present, Z-Tel serves approximately 100,000 residential customers.

Z-Tel’s service is not just a simple bundle of traditional telecommunications services. Z-Tel combines its local and long distance telecommunications services with web-based software that enables each Z-Tel subscriber to organize his or her communications, including email, voicemail, fax, and even Personal Digital Assistants (“PDA”), by accessing a personalized web-page via the Internet. In addition, the personal Z-Line number can be programmed to follow the customer anywhere he or she goes via the “Find Me” feature. Other service features include low long distance rates and message notification by phone, email, or pager. Customers can also initiate telephone calls (including conference calls in the near future) over the traditional phone network, using speed-dial numbers from their address book on their personalized web page.

The Z-Tel service bundles many different communications services – voicemail, email, fax, Internet, PDAs, local and long distance telecommunications – into an easy-to-use

communications control center. One element of that bundle is local exchange telecommunications service. To provide the local exchange portion of its service offering, Z-Tel purchases unbundled network elements from incumbent local exchange carriers. At present, the primary means of local exchange service provision is UNE-P. Because Z-Tel is dependent upon the local exchange carrier's UNEs to provide service, Z-Tel's interest in this and related proceedings is apparent.

The purpose of this statement is to discuss the basic economic principles of effective enforcement. These economic principles point out the importance of the size of the remedy payments and penalties to the effectiveness of an enforcement scheme. As part of my testimony, I provide estimates of the annual financial liability, or review threshold, to which U S WEST ("USW") should be subject to in Arizona to ensure that USW will not provide discriminatory service to competitive local exchange carriers ("CLECs") in an effort to protect its monopoly of the local exchange. My estimates are based on an economic analysis of the social cost of deterring competition by providing discriminatory service to CLECs. Additionally, I compare my estimates to the financial liability limits suggested by the FCC in its Order granting Bell Atlantic-New York ("BA-NY") interLATA relief.

II. FUNDAMENTAL ECONOMIC PRINCIPLES OF EFFECTIVE ENFORCEMENT

Generally, the purpose of any enforcement program is to ensure compliance with particular rules that are, absent the program, contradictory to the self-interest of the regulated entity. In the present context, the role any performance assurance plan¹ (or "PAP") is to ensure USW provides CLECs with non-discriminatory access to UNEs. A PAP is required because in the provision of UNEs to CLECs, USW is contributing to the growth of competition in its presently-monopolized local exchange markets in Arizona. It is unreasonable to expect a monopolist to willingly participate in the reduction of its monopoly power absent some manipulation of its profit maximizing incentives.

One counterbalance to the incentives to deter entry through discriminatory provision of service is a PAP that reliably measures the quality of service provided and prescribes appropriate penalty payments when such service is found inadequate. Although the prospect of interLATA relief (under section 271 of the Communications Act of 1934, as amended, or "Act") may motivate USW to provide non-discriminatory service today, once 271 approval is granted that motivation is gone and only the PAP remains to counterbalance the incentives of USW to impede the development of competition by providing wholesale services to CLECs in a discriminatory manner. Absent an effective PAP, the development of competition in Arizona will be substantially impeded if not halted altogether.

¹ For purposes of this statement, I have adopted the New York nomenclature and use the term "performance assurance plan" or "PAP" to describe antibacksliding measures that "assure" that USW continues to provide adequate service once it obtains section 271 authority.

At the most basic level, the role of the PAP is to extract any potential financial gain USW achieves by providing discriminatory service to a CLEC. Consider a simple example where USW retains a customer by providing discriminatory service and, as a direct consequence, protects \$100 in profit. If the PAP levies a penalty of \$100 for providing discriminatory service, USW has nothing to gain by providing discriminatory service and, in theory, it will not.²

A mere \$100 fine, however, would be inadequate for two reasons. First, this \$100 fine would be an effective deterrent only if USW knows that its discriminatory act will be detected and punished with 100% certainty. If there is only a 50% probability of being detected and punished, then the expected penalty is only \$50 (*i.e.*, $0.5 * \$100 + (1 - 0.5) * \0), which is well below the \$100 profit retained by discriminating. Thus, with less than a 100% probability of detection and punishment, a remedy or penalty equal to the expected gain from non-compliance will be inadequate. Within the standard economic framework of crime and punishment, the optimal remedy for noncompliance is equal to the ratio of the expected financial gain to the probability of detection and punishment. If the firm expects to gain \$100 from non-compliance, and has a 50% chance of being detected and punished, then the optimal fine will be \$200 (*i.e.*, $\$100/0.50$).³ For some fixed expected gain, the optimal fine is inversely related to the probability of detection.

Second, the \$100 penalty only offsets the profits achieved by discrimination. It does not compensate society for the harm caused by the discrimination (*e.g.*, higher prices). In

² For a detailed exposition on the economics of crime and punishment, see Gary S. Becker, "Crime and Punishment: An Economic Approach," *Journal of Political Economy*, Vol. 76 (1968).

³ Assuming risk neutrality on behalf of the offender.

the present context, the social harm from discrimination is the reduction in competition in local, long distance, and high-speed data markets. Thus, in addition to the profits derived from discrimination, economic theory indicates that the dollar value of the effects on consumers must also be considered. A good portion of the consumer effects will be captured by USW in the form of profits. However, anytime a monopolist raises price, the reduction in consumer welfare exceeds the private gain to the monopolist. It is this portion of consumer welfare that is not transferred to the monopolist – the “deadweight loss” in economics parlance – that also must be considered.⁴

The simple example above illustrates that in order to establish a penalty level that encourages USW to provide non-discriminatory service, we need to approximate two things: a) the financial gain from discrimination and b) the probability the PAP will detect discrimination and levy a penalty. Generally, the financial gain of discrimination is positive, otherwise there is no reason to engage in it. For a number of reasons, including the size of and time constraints on PSC staff, a perfect record of detection and punishment is an unrealistic expectation. Thus, the probability of detection will be less than one, and the overall potential penalty must be adjusted consistent with the probability of detection.

III. ESTIMATING ANNUAL FINANCIAL LIABILITY FOR USW IN ARIZONA

There are a number of conceivable methods that can produce estimates of the potential social cost and/or financial gain from discrimination. All of these methods require a

⁴ See Becker, *id.*

number of assumptions. The requirement to make assumptions, some of which are more fact-based than others, should not deter us from doing so. Regardless of the enforcement scheme, the remedies must be sized. This task will either be methodological or arbitrary, the latter of which – by ignoring the basic economics of enforcement discussed above – offers little hope of effective enforcement. So that all parties can contribute to the debate and adjustments to the remedies can be made in the future as market conditions change, my estimation approach is clearly set forth in Exhibits 1 and 2 attached to this testimony.

Exhibit 2 includes many estimates of the USW's financial gain from discrimination based on scenarios I believe to be reasonable. Because my estimation approach is rather straightforward, other scenarios are easily considered. It is important to realize that my chosen scenarios assume rather severe discrimination and, as a consequence, severe impacts. Only if USW engages in severe discrimination will these liability limits be reached. As long as service is provided on reasonably non-discriminatory basis, actual remedies or penalties will be far below the review threshold.

As a baseline case, I assume that without discrimination, USW will lose three percentage points of market share per year over the next ten years. This share loss is roughly equivalent to the share loss of AT&T following divestiture where AT&T lost 30% market share over a 10 year period.⁵ I also assume that switched access line growth is 5% per year.⁶ In this

⁵ According to the 1994/5 SOCC, Table 8.12, AT&T had a market share of 70% of presubscribed lines.

⁶ Over the period 1996 through 1998, switched access lines grew by an average of 4.9% (FCC, *Further Notice of Proposed Rulemaking*, FCC 99-345, Table B-3).

base case, revenue per customer is \$36.45 per month⁷ and is assumed to fall by 10% over the ten-year period, or \$0.122 per point of market share lost by USW. The estimated financial liability is equal to the entire social cost of the implied price increase resulting from discrimination.⁸

The effects of discrimination in my simulations are captured in market share loss and prices. In my first scenario, I assume that market share loss falls to 2% per year over the ten-year period because of severe discrimination in Year 1 and price falls by only 7%, or 3% less than the benchmark case. The estimated effective financial liability for USW in this scenario is \$194 million. Alternatively, assume that discrimination postpones share loss in Year 1, increasing to 2% for Years 2 through 5 and 3% thereafter. In other words, it takes some time for the competitive process to recover from the severe discrimination in Year 1. The estimated effective financial liability in this scenario is \$220 million. A number of other scenarios are presented in the Exhibit 2, producing estimates in the \$174 to \$260 million range.

It is important to note that the above-described scenarios include only profits from current services provided by USW. Profits from long distance, DSL, and other new services are not included, demonstrating that my approach is conservative. The FCC in the *BA-NY 271 Order* noted that profits from these services are important in determining the review threshold.

The FCC stated:

While we are using net local revenue as a reference point or yardstick for comparison purposes, we do not suggest that local revenues constitute the only relevant figure. We recognize that Bell Atlantic may also derive benefits in other markets (such as long distance) from retaining local market share.⁹

⁷ See Exhibit 1.

⁸ The measure of financial liability is illustrated by the figure in Exhibit 2.

⁹ *BA-NY 271 Order*, n. 50.

Thus, any estimate of the review threshold based on local profits alone should be viewed as a lower bound of the threshold.

The potential gains to USW in the market for new services, such as long distance and DSL are sizeable. If we assume, for example, that the profit margin on the average long distance bill of \$25 is approximately 20%, then USW could increase its annual profit by \$1.7 million by increasing its market share through discrimination by only 1%.¹⁰ Assuming a 38.5% profit margin on DSL service, where USW's monthly prices are \$37.90, USW could increase its annual profit by \$5 million for every 1% market share it gains from discrimination.¹¹ Clearly, the gains from discrimination in these markets can be substantial.

Furthermore, my estimates are not adjusted for the probability of detection and punishment. Because no PAP will achieve 100% detection and punishment, the financial liability for the review threshold must be increased above these estimates to be effective. It is nearly impossible to get a precise estimate on the probability of detection and punishment, but I believe that a 75% probability is conservative. Because of Type II error, statistical testing alone reduces the probability of detection by at least 15%.¹² At a 75% probability of detection and punishment, the \$194 million estimated financial liability from above should be increased to

¹⁰ With 2.861 million lines and a margin of \$5 per month ($25 \cdot 0.20$), the annual gain from 1% market share is \$1.7 million ($= \$5 \cdot 2.861 \cdot 12 \cdot 0.01$).

¹¹ The calculation is $\$37.90 \cdot 0.385 \cdot 2.861 \cdot 12 \cdot 0.01 = 5.0$ million. For price information, see http://www.uswest.com/pcat/for_home/product/1,1749,537_1_3,00.html. Margin assumption is provided by *Broadband*, Stanford C. Bernstein & Co., Inc. and McKinsey & Company, Inc., Exhibit 63 (January 2000).

¹² AT&T has performed a statistical analysis that suggests Type I and Type II error are balanced at 15%. At a alpha level of 0.15, the probability that USW will discriminate and not be detected is approximately 15%. At smaller alpha levels, the probability of Type II increases.

\$259 million. On average, my estimates suggest that \$275 million is a reasonable initial value for the financial liability or review threshold for USW-AZ.

Consistent alternative approaches have been estimated by other parties. For example, in the FCC's review of Bell Atlantic-New York's ("BA-NY's") section 271 application, Professors R. Glenn Hubbard and William H. Lehr, on behalf of AT&T, provided an alternative estimation approach.¹³ Put simply, their approach sizes the review threshold by assuming that the ILEC is able to retain 10% of its profit over a 10-year horizon by discriminating against the CLECs in the provision of UNEs. I have replicated their method to estimate the size of the review threshold for USW. As illustrated in Exhibit 3, this alternative method estimates a review threshold of \$281 million a year. Generally, this estimate is consistent with those from my alternative approach.

In the *BA-NY 271 Order*,¹⁴ the FCC indicated that BA-NY's proposed remedy cap was sufficient because it represented 36% of BA-NY's annual net income.¹⁵ To my knowledge, no economic or financial analysis was performed by the FCC to support this figure. However, both MCI Worldcom and AT&T filed affidavits with the FCC asserting that the proposed remedy cap for BA-NY was too low.

The 36% of Net Income standard has proven ineffective in New York. The performance of BA-NY following its 271 approval demonstrates that the initial maximum

¹³ Affidavit of R. Glenn Hubbard and William H. Lehr on Behalf of AT&T Communications of New York, Inc., CC Docket No. 99-295.

¹⁴ See *Application by Bell Atlantic New York for Authorization Under Section 271 of the Communications Act To Provide In-Region, InterLATA Service in the State of New York, Memorandum Opinion and Order*, CC Docket No. 99-295 (rel. Dec. 22, 1999) ("*BA-NY 271 Order*").

remedy payment of 36% of net income was insufficient to ensure ongoing adequate performance by BA-NY, in spite of the initial findings of the New York Public Service Commission (“NYPSC”) and the FCC. As a result, the NYPSC and FCC raised the remedy payments in New York to a maximum potential liability of 44% of annual net income.¹⁶ This 44% liability figure is more consistent with the analysis prepared by MCI WorldCom and AT&T as part of the BA-NY 271 proceeding, which recommended to the FCC that the minimum financial liability for BA-NY should be no less than 40% of net income.¹⁷ I believe the recent modifications made by the NYPSC and the FCC support the use of economic and financial models to determine liability.

Following the FCC’s approach in the *BA-NY Order* and including subsequent increases in BA-NY’s financial liability, the financial liability for USW in Arizona should be about \$114 million (44% of \$259.9 million) as calculated in Exhibit 1. This liability figure, however, is well below the lower end of my estimates of financial liability (based on an economic framework) provided in Exhibit 2.

¹⁵ *BA-NY 271 Order*, ¶ 436.

¹⁶ The NYPSC added an additional \$34 million dollars to the original \$269 million cap. *New York Market Adjustment Order*. In the *Consent Decree* between the FCC and BA-NY, a “voluntary contribution” of \$3 million was assessed upon BA-NY with the potential for another \$24 million if substandard performance continued. *See Consent Decree* at ¶¶ 16-17. It remains unclear whether or not the BA-NY PAP will be effective at the current, higher remedy payments.

¹⁷ Joint Declaration of Dr. George S. Ford and Dr. John D. Jackson, CC Docket No. 99-295 at 16; and Affidavit of R. Glenn Hubbard and William H. Lehr on Behalf of AT&T Communications of New York, Inc., CC. Docket No. 99-295.

IV. CONCLUSION

Economic analyses of the review threshold suggest the financial liability should be *at least* about \$275 million annually. The treatment of BA-NY by the FCC and the NYPSC indicates that the review threshold should be about \$114 million. Assuming a generous detection and punishment probability of about 75% indicates an annual financial liability of about \$275 million range based on the economic methods presented and about \$152 million based on the FCC's suggestion. Considering both of these figures, an initial review threshold of about \$225 million is reasonable (but perhaps too low). I also recommend that the Commission provide itself the opportunity to increase or decrease this liability amount in the future as conditions warrant.

These estimates of financial liability assume rather severe discrimination. If USW performs reasonably well, actual payments will be well below my estimates of the review threshold. As I previously mentioned, these estimates should be used as a guide for the review threshold that will be reached only if discrimination is severe.

This concludes my statement.

EXHIBIT 1: US WEST ARMIS DATA

Data for U S WEST-AZ from ARMIS 43-01 (1999)

(Downloaded from FCC Web Site: <http://www.fcc.gov/ccb/armis/>)

Year	Company Name	Row_#	Row_Title	Total_b	State_g	Interstate_h
1999	US WEST-Arizona	1090	Total Operating Revenues	1,625,173	1,142,559	482,614
1999	US WEST-Arizona	1190	Total Operating Expenses	1,155,198	863,867	291,331
1999	US WEST-Arizona	1290	Other Operating Income/Losses	496	366	130
1999	US WEST-Arizona a	1390	Total Non-operating Items (Exp)	621	1,794	-1,173
1999	US WEST-Arizona	1490	Total Other Taxes	101,559	68,330	33,229
1999	US WEST-Arizona	1590	Federal Income Taxes (Exp)	108,359	57,954	50,405
1999	US WEST-Arizona	1915	Net Return	108,952
1998	US WEST-Arizona		Access Lines	2,861,742		

FCC's Net Return Calculation*

		Net Return	36% Net Return	44% Net Return
US WEST-Arizona	"Net Return"	259,932	93,576	114,370
US WEST -Arizona	75% Probability Adjustment		124,768	152,493

*Calculations in testimony based on FCC NY 271 Order at ft. 1332: "To arrive at a total "Net Return" figure that reflects both interstate and intrastate portions of revenue derived from local exchange service, we combined line 1915 (the interstate "Net Return" line) with a computed net intrastate return number (total intrastate operating revenues and other operating income, less operating expenses, non-operating items and all taxes)." Access line data is from the Federal Communications Commission's Local Competition Report (August 1999).

EXHIBIT 2: ESTIMATES OF FINANCIAL GAIN

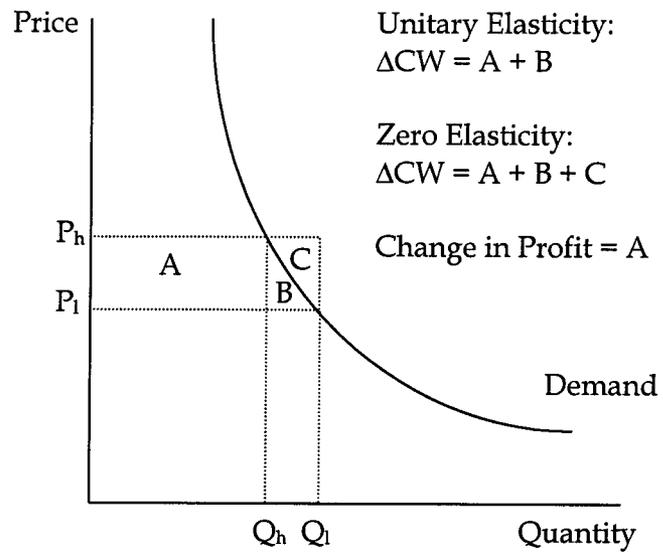
For simplicity, I assume the demand curve takes the form $Q = S/p$, where Q is quantity demanded, S is market size (pQ), and p is market price. This demand curve is isoelastic meaning the demand curve has constant unit elasticity. For this demand curve, the change in consumer welfare for a price change, which will include the change in profit, is $\Delta CW = S \cdot \ln(p_h/p_l)$, where the change in consumer welfare (CW) is equal to the market size multiplied by the natural log of the ratio of the higher price (p_h) to the lower price (p_l). Generally, the elasticity of demand for local services will be less than one so my estimates are conservative. The loss in consumer welfare due to a price increase will be largest when demand is perfectly inelastic. This relationship between consumer welfare (or surplus) and elasticity is illustrated in the figure below. For the isoelastic demand curve, the loss in consumer welfare for a price increase is measured by areas A + B. For the zero elasticity demand curve, the loss is A + B + C. My estimate of the financial gain (including consumer welfare effects) is equal to the area A + B in the figure. The effect of the elasticity assumption is small (about 1%). Similarly, the area labeled B in the figure is about 1% of the total welfare effect.

Following the FCC's analysis in BANY 271 Order, the market size for AZ is \$1.25 billion (See Exhibit 1: 2.861 million access lines multiplied by a price of about \$36.45 per month).¹ Access lines are assumed to grow exogenously (without respect to price) at 5% per year.² The discount rate is 10%. In the benchmark case, USW-AZ loses three percentage points of market share per year and price falls by 10% over the 10 year time period (\$36.45 to \$32.81).³ This price change is roughly equivalent to \$0.122 per percentage point of market share. The changes in market share, and thus price, for each different scenario are provided in the tables.

¹ See Exhibit 1.

² Over the period 1996 through 1998, switched access lines grew by an average of 4.9% (Federal Communications Commission, *Further Notice of Proposed Rulemaking*, FCC 99-345, Table B-3.)

³ According to the 1994/5 SOCC, Table 8.12, AT&T had a market share of 70% of presubscribed lines. For the price reduction assumption, I calculated the reduction in long distance rates over the time period 1984 through 1994, adjusting for access charge reductions (Trends in Telephone Service, Tbls. 1.2, 14.6, and 14.7 (May 2000).



SCENARIO 1

Year	Switched Access Lines	Share Loss		Price		ΔCW	ΔCW: Net Present Value (10%)
		Benchmark	Scenario	Benchmark	Scenario		
1998	2,861,742			\$36.45	\$36.45		
1	3,004,829	3.00%	2.00%	\$36.09	\$36.21	4,417,860	4,417,860
2	3,155,071	3.00%	2.00%	\$35.72	\$35.96	9,356,157	8,505,597
3	3,312,824	3.00%	2.00%	\$35.36	\$35.72	14,861,969	12,282,619
4	3,478,465	3.00%	2.00%	\$34.99	\$35.48	20,986,274	15,767,298
5	3,652,389	3.00%	2.00%	\$34.63	\$35.24	27,784,261	18,977,024
6	3,835,008	3.00%	2.00%	\$34.26	\$34.99	35,315,673	21,928,254
7	4,026,758	3.00%	2.00%	\$33.90	\$34.75	43,645,167	24,636,559
8	4,228,096	3.00%	2.00%	\$33.53	\$34.51	52,842,718	27,116,670
9	4,439,501	3.00%	2.00%	\$33.17	\$34.26	62,984,044	29,382,521
10	4,661,476	3.00%	2.00%	\$32.81	\$34.02	74,151,069	31,447,292
TOTAL =							194,461,695
With 75% Probability Adjustment =							259,282,260

SCENARIO 2

Year	Switched Access Lines	Share Loss		Price		ΔCW	ΔCW: Net Present Value (10%)
		Benchmark	Scenario	Benchmark	Scenario		
1998	2,861,742			\$36.45	\$36.45		
1	3,004,829	3.00%	0.00%	\$36.09	\$36.45	13,209,280	13,209,280
2	3,155,071	3.00%	2.00%	\$35.72	\$36.21	18,649,309	16,953,917
3	3,312,824	3.00%	2.00%	\$35.36	\$35.96	24,685,934	20,401,598
4	3,478,465	3.00%	2.00%	\$34.99	\$35.72	31,371,848	23,570,134
5	3,652,389	3.00%	2.00%	\$34.63	\$35.48	38,764,062	26,476,376
6	3,835,008	3.00%	3.00%	\$34.26	\$35.11	41,130,002	25,538,496
7	4,026,758	3.00%	3.00%	\$33.90	\$34.75	43,645,167	24,636,559
8	4,228,096	3.00%	3.00%	\$33.53	\$34.38	46,319,363	23,769,157
9	4,439,501	3.00%	3.00%	\$33.17	\$34.02	49,163,076	22,934,938
10	4,661,476	3.00%	3.00%	\$32.81	\$33.66	52,187,521	22,132,603
TOTAL =							219,623,057
With 75% Probability Adjustment =							292,830,743

SCENARIO 3

Year	Switched Access Lines	Share Loss		Price		ΔCW	ΔCW: Net Present Value (10%)
		Benchmark	Scenario	Benchmark	Scenario		
1998	2,861,742			\$36.45	\$36.45		
1	3,004,829	3.00%	1.00%	\$36.09	\$36.33	8,820,921	8,820,921
2	3,155,071	3.00%	2.00%	\$35.72	\$36.09	14,010,555	12,736,869
3	3,312,824	3.00%	2.00%	\$35.36	\$35.84	19,782,277	16,348,989
4	3,478,465	3.00%	2.00%	\$34.99	\$35.60	26,187,922	19,675,374
5	3,652,389	3.00%	2.00%	\$34.63	\$35.36	33,283,595	22,733,143
6	3,835,008	3.00%	3.00%	\$34.26	\$34.99	35,315,673	21,928,254
7	4,026,758	3.00%	3.00%	\$33.90	\$34.63	37,475,969	21,154,208
8	4,228,096	3.00%	3.00%	\$33.53	\$34.26	39,772,916	20,409,795
9	4,439,501	3.00%	3.00%	\$33.17	\$33.90	42,215,528	19,693,855
10	4,661,476	3.00%	3.00%	\$32.81	\$33.53	44,813,445	19,005,275
TOTAL =						182,506,682	
With 75% Probability Adjustment =						243,342,242	

SCENARIO 4

Year	Switched Access Lines	Share Loss		Price		ΔCW	ΔCW: Net Present Value (10%)
		Benchmark	Scenario	Benchmark	Scenario		
1998	2,861,742			\$36.45	\$36.45		
1	3,004,829	3.00%	1.00%	\$36.09	\$36.33	8,820,921	8,820,921
2	3,155,071	3.00%	1.00%	\$35.72	\$36.21	18,649,309	16,953,917
3	3,312,824	3.00%	1.00%	\$35.36	\$36.09	29,573,052	24,440,539
4	3,478,465	3.00%	2.00%	\$34.99	\$35.84	36,538,171	27,451,669
5	3,652,389	3.00%	2.00%	\$34.63	\$35.60	44,225,793	30,206,812
6	3,835,008	3.00%	2.00%	\$34.26	\$35.36	52,698,548	32,721,652
7	4,026,758	3.00%	3.00%	\$33.90	\$34.99	55,919,113	31,564,881
8	4,228,096	3.00%	3.00%	\$33.53	\$34.63	59,343,144	30,452,416
9	4,439,501	3.00%	3.00%	\$33.17	\$34.26	62,984,044	29,382,521
10	4,661,476	3.00%	3.00%	\$32.81	\$33.90	66,856,143	28,353,531
						TOTAL =	260,348,860
						With 75% Probability Adjustment =	347,131,813

SCENARIO 5

Year	Switched Access Lines	Share Loss		Price		ΔCW	ΔCW: Net Present Value (10%)
		Benchmark	Scenario	Benchmark	Scenario		
1998	2,861,742			\$36.45	\$36.45		
1	3,004,829	3.00%	0.00%	\$36.09	\$36.45	13,209,280	13,209,280
2	3,155,071	3.00%	2.00%	\$35.72	\$36.21	18,649,309	16,953,917
3	3,312,824	3.00%	2.00%	\$35.36	\$35.96	24,685,934	20,401,598
4	3,478,465	3.00%	3.00%	\$34.99	\$35.60	26,187,922	19,675,374
5	3,652,389	3.00%	3.00%	\$34.63	\$35.24	27,784,261	18,977,024
6	3,835,008	3.00%	3.00%	\$34.26	\$34.87	29,481,119	18,305,455
7	4,026,758	3.00%	3.00%	\$33.90	\$34.51	31,285,087	17,659,616
8	4,228,096	3.00%	3.00%	\$33.53	\$34.14	33,203,214	17,038,499
9	4,439,501	3.00%	3.00%	\$33.17	\$33.78	35,243,032	16,441,135
10	4,661,476	3.00%	3.00%	\$32.81	\$33.41	37,412,603	15,866,596
TOTAL =						174,528,493	
With 75% Probability Adjustment =						232,704,658	

EXHIBIT 3: REPLICATION OF HUBBARD-LEHR MODEL

HUBBARD-LEHR CALCULATIONS		
Item	Value (mil except per line)	Source
End User	\$194,842	1999 ARMIS for USW-AZ Table 43-03
Switched Access	\$162,696	1999 ARMIS for USW-AZ Table 43-03
State Access	\$121,079	1999 ARMIS for USW-AZ Table 43-03
Long Distance Message	\$25,868	1999 ARMIS for USW-AZ Table 43-03
Total Revenue	\$1,459,420	
Switched Access Lines (thous.)	2,861.74	1999 ARMIS for USW-AZ Table 43-08
Revenue per line	\$42.50	
Cost per line (HAI5.0a)	\$17.22	HAI 5.0a, USF Page for USW-AZ
Billing cost adjustment per line	\$(1.72)	HAI Billing and LNP Costs
Network cost per line	\$15.50	
Retail cost readjustment	1.3	Hubbard-Lehr Testimony, Table A.
Operating cost per line	\$20.15	
Profit Net of Taxes per line	\$13.30	
Total Profit	\$456,700	
10 year NPV of Profit	\$2,806,222	
10% of profit	\$280,622	

CERTIFICATE OF SERVICE

I, Charles M. Hines III, hereby certify that a true and correct copy of the foregoing **“Initial Comments of Z-Tel Communications, Inc.”** was delivered by first-class mail this 21st day of July, 2000 to the individuals on the following list:

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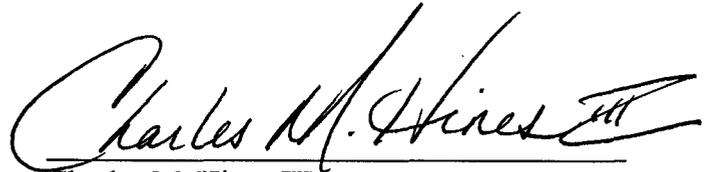
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A handwritten signature in black ink, reading "Charles M. Hines III". The signature is written in a cursive style with a large initial "C" and a long horizontal stroke at the end.

Charles M. Hines III