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Government Affairs Director

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

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January 22, 2001

Ms. Magalie Roman Salas
Secretary
Federal Communications Commission
445 Twelfth Street, S. W. - Room TWB-204
Washington, D. C. 20554

Re: Ex parte, CC Docket No. 98-56, Performance Measurements and Reporting Requirements for Operations Support Systems, Interconnection, and Operator Services and Directory Assistance

Dear Ms. Roman Salas:

On Friday, January 19, 2001, Michael Kalb and the undersigned, both of AT&T, met with the following members of the Common Carrier Bureau: Daniel Shiman-Policy and Program Planning Division, Alex Belinfante-Industry Analysis Division, and Raj Kannan-Competitive Pricing Division. The purpose of the meeting was to provide an overview of AT&T's current thinking regarding incumbent LEC local competition performance improvement plans. The attached presentation was used to guide our discussion.

Two copies of this Notice are being submitted to the Secretary of the FCC in accordance with Section 1.1206 of the Commission's rules.

Sincerely,

ATTACHMENT

cc: A. Belinfante
R. Kannan
D. Shiman

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ABCDE



Balancing Methodology

to

Federal Communications Commission

19 JAN 2001

Michael Kalb, Ph.D.

mk@att.com

Introduction

A meaningful system of self-enforcing consequences for discriminatory ILEC performance, as envisioned by the 1996 Act, is critically important

- Protection of the public's interest
- Rapid and sustainable development of a competitive local telecommunications market.



Introduction

Self-enforcing incentives structure reduces ILEC monopoly market power

- Simple, accurate, direct, modular, and understandable quantitative rules
- Based upon an adequate set of performance measurements
 - Covers full range of market activities with parity and benchmark measures
 - Submeasures disaggregated for like-to-like comparisons
 - Quality design of measurement implementation
- Methodology for assessment of performance discrimination and its severity
 - Fair and robust basis and implementation
 - Measured data provide assessment statistics and parameters
- Prompt and appropriate consequences for performance discrimination
 - Self-adapting to market size and maturity
 - Smooth escalation with severity
 - All determinations completed within month of interest



Incentives Structure for Discriminatory ILEC Performance Class Rules

- Underlying measurements are mapped into one of two classes of performance standard:
 - parity with analogous incumbent LEC performance results for which a statistical modified-z test applies
 - benchmark (absolute level of required performance) for which there is a “bright line” approach (no statistical test)
- Each class has a rule for determining if performance for a particular period “passes” or “fails” and, if it fails, whether additional consequences are warranted.



Statistical Methodology for Parity Measures

Principle Properties

- Basis and implementation are simple, fair, and robust
- Test results are prompt and easy to calculate for measures expressed as
 - Averages
 - Proportions/percentages
 - Ratios/rates
- Tests based upon support delivered on all individual submeasures to
 - individual CLECs (Tier 1)
 - industry as a whole (Tier 2)
- Consequences escalate smoothly with failure severity
 - Natural severity parameter
 - Limited quadratic escalation



Fairness of Statistical Methodology
Effects of Random Variation on Parity Test

Actual State of SQM:

		Parity	Disparity
Outcome of Statistical Test:	Parity	Correct Declaration	<u>Type II</u> <u>Error</u>
	Disparity	<u>Type I</u> <u>Error</u>	Correct Declaration



Simplicity of Statistical Methodology **Balancing Critical Value for Modified z**

- For each submeasure equate probability of Type I and Type II errors
- Direct accounting of random variation
 - All parties automatically share “equally” in effects of random variation
 - Concept of materiality inserted in a clearly defined manner ($\delta < 0.25$)
 - Sample size dependency appropriately handled
 - Small samples
 - Large samples
 - Avoidance of complicated mitigation procedures
- Produces a Balancing Critical Value (z^*)
 - Touchstone for Modified z score (z) per submeasure
 - Provides reference for severity



Robustness of Statistical Methodology Balancing Critical Value & Severity - Averages

- Methodology directed by Louisiana staff under NDA
- Joint statisticians report abstracts methodology from sensitive data
- Methodology does not require truncation of cell test statistics
- The z^* for averages is function of materiality and sample size

$$z^* = -\frac{\delta}{2} \sqrt{\frac{n_C n_I}{n_C + n_I}}$$

- Ratio of test statistic to balancing critical value is properly normalized indicator of severity of failure.

$$\rho \equiv \frac{z}{z^*} = \frac{2(\bar{x}_C - \bar{x}_I)}{s_I \delta}$$



Fairness of Statistical Methodology
Alternative Hypothesis – Material Violation

Probability of CLEC failure

Proportion of ILEC Failure:	δ				
	0.00	0.01	0.25	0.50	1.00
1.0%	1.0%	2.6%	5.0%	11.8%	31.9%
5.0%	5.0%	8.1%	11.8%	21.0%	44.0%



Smooth Escalation with Severity
Tier I Applicable Consequences for Parity Submeasures

Modified z statistic (z)	Performance Designation	Applicable Consequence (\$)
greater than or equal to z^*	Compliant	0
less than z^* to $5z^*/3$	Basic Failure	$a(z/z^*)^2 + b(z/z^*) + c$
less than $5z^*/3$ to $3z^*$	Intermediate Failure	
less than $3z^*$	Severe Failure	25,000

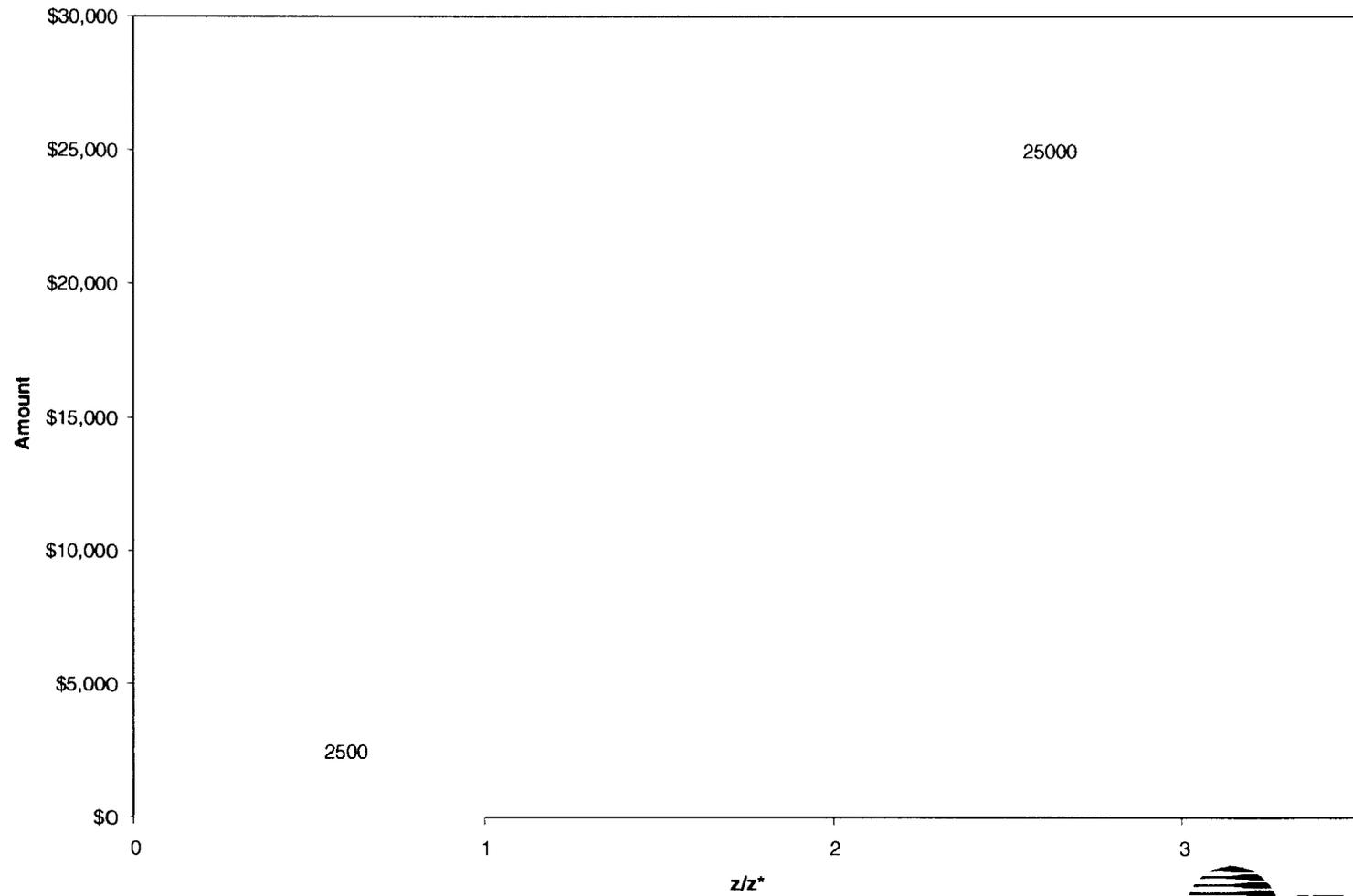
$a = 5625$

$b = -11250$

$c = 8125$



Tier I Parity Consequence Function



Robustness of Statistical Methodology

Tier I Applicable Consequences for Parity Submeasures - Examples

Example	n_C	z^*	z	Performance Designation	Consequences
1	36	- 0.75	- 1.00	Basic	\$3,125
2	256	- 2.00	- 1.80	Compliant	\$0
3	400	- 2.50	- 3.33	Basic	\$3,125
4	576	- 3.00	- 6.00	Intermediate	\$8,125
5	784	- 3.50	- 12.00	Severe	\$25,000



Incentives Structure for Discriminatory ILEC Performance Tier II

- Uses aggregate data for all CLECs within each submeasurement.
- Virtually the same data and computational processes as Tier I
 - Reduction of consequence threshold below the balancing critical value
 - Higher consequences



Smooth Escalation with Severity
Tier II Applicable Consequences for Parity Submeasures

Modified z-statistic (z)	Performance Designation	Applicable Consequences (\$)
greater than or equal $5z^*/3$	Indeterminate	0
less than $5z^*/3$ to $3z^*$	Market Impacting	$n [a(z/z^*) + b(z/z^*) + c]$
less than $3z^*$	Market Constraining	$n 25,000$

$a = 5625$

$b = - 11250$

$c = 8125$



Smooth Escalation with Severity
Establishing the Value of n for Tier II

<u>Lines Provided to CLEC</u> Total ILEC and CLEC Lines	n
More than 50%	0
More than 40% to less than or equal to 50%	1
More than 30% to less than or equal to 40%	2
More than 20% to less than or equal to 30%	4
More than 10% to less than or equal to 20%	6
More than 5% to less than or equal to 10%	8
0% to less than or equal to 5%	10



Incentives Structure for Discriminatory ILEC Performance
Comparison of Balancing Methodologies

<u>Feature</u>	BST Plan	AT&T Plan
Cells	Deeply Disaggregated	Submeasure
Test Statistic	Truncated z	Modified z
Alternative Hypothesis	Differ for each Tier	Same for each Tier
Test	Aggregated Measure	Submeasure
Small Samples	Permutation Test	Permutation/HG Dist
Increase Remedy with	Excess Occurrences	Severity (Continuously)
Mitigation	Not explicit	None needed

