

BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON, D.C. 20268-0001

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POSTAL RATE COMMISSION
OFFICE OF THE SECRETARY

POSTAL RATE AND FEE CHANGES, 2001

Docket No. R2001-1

NOTICE OF THE UNITED STATES POSTAL SERVICE OF
REVISED PAGES OF BERNSTEIN TESTIMONY - ERRATA

Revised pages of USPS-T-10 are attached containing minor revisions to the testimony of witness Bernstein. Some are already described in interrogatory responses, and none materially affect his results or conclusions. The changes to each page are described on the attached sheet.

Respectfully submitted,

UNITED STATES POSTAL SERVICE

By its attorney:


Eric P. Koetting

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon all participants of record in this proceeding in accordance with section 12 of the Rules of Practice.


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12/10/01 Revisions to USPS-T-10

- Page 9, line 13 Change "but using the Internet, though it has now" to
"although now through use of the Internet it has"
- Page 35, line 12 *Inside first parenthesis to the right of the equals sign,*
change "- N" to "m - N"
- Page 39, line 15 Change "0 to 24" to "1 to 25"
- line 21 Change "0.9830" to "0.9380"
- line 24 Change "\$7.5985" to "\$7.1434"; change "0.3339" to
"0.3545"; and change "22.76" to "20.15"
- line 25 Change "0.0239" to "0.0238"
- Page 79, line 9 Insert "supplemental" before "testimony" and change "USPS-
T-21" to "USPS-ST-45"

1 predominant, while the positive influences were more important in workshare letters.

2 In R2000-1, a similar econometric approach was used for single-piece and
3 workshare letters, but the disparate impacts of the negative and positive influences
4 were given more focus. The negative trend effect in single-piece letters was seen as
5 encompassing the effects of declining user costs, electronic diversion, and the gradual
6 decline in mail sent by households. The electronic diversion discussion was greatly
7 expanded, with detailed looks at the four key technologies affecting the mail: fax, E-
8 mail, EFT, and EDI. Though the Internet was given considerable attention, it was seen
9 as being one among many influences on mail volume. Of the four technologies
10 affecting the mail, only E-mail is necessarily linked to the Internet. Fax messages are
11 sent over ordinary phone lines. Electronic funds transfers are computer-related but do
12 not require the Internet. Electronic data interchanges between large businesses are
13 traditionally done electronically, although now through use of the Internet it has
14 become possible for firms of all sizes to conduct these transactions online. In general,
15 this diversion was relatively long-standing with fax messaging and electronic funds
16 transfers predating the widespread use of the Internet. Therefore, most of the
17 diversion that existed at the time of the filing of the R2000-1 case was not Internet
18 related. This is consistent with the fact that as late as mid-1999, household Internet
19 access was still relatively low.

20 Dr. Tolley's R2000-1 testimony also discussed the degree to which one type of
21 technology may be replacing another, leaving mail volume unaffected. For example,
22 fax was seen as having a waning influence, while E-mail was viewed as more
23 significant than in the past, reflecting the idea that E-mail was beginning to serve as a
24 substitute for fax. Similarly, one type of electronic bill payment might replace another.
25 Still, electronic alternatives were seen as being an important negative influence on mail

1 or households. The Nielsen numbers are monthly measures of individuals who are active
2 users of the Internet at home.

3 Chart A showed active users from April 1999 to May 2001. Active users increased
4 from 57.6 million to 103.0 million. Growth was fairly steady, averaging nearly two million
5 new users each month.

6 4. Statistical Model of Active Users

7 a. Bass Curve Model

8 Active users are modeled by estimating a Bass curve also known as a market
9 penetration curve or product diffusion curve. A Bass curve is a line showing how much of
10 a potential market has adopted a new product as a function of time and the number of
11 previous adopters.¹ The formula is given below:

$$12 N_T = N_{t-1} + p(m - N_{t-1}) + q \left(\frac{N_{t-1}}{m} \right)^\delta (m - N_{t-1})$$

13 where N is the number of adopters at time "t" or in the previous period (depending on the
14 time subscript), *p* is a parameter for the force of outside or exogenous factors affecting
15 adoption (i.e. factors independent of the number who have adopted the innovation
16 previously, sometimes referred to as the coefficient of innovation), *q* is the parameter for
17 the force of previous adopters in creating new adopters (e.g. by word of mouth, sometimes
18 called to coefficient of imitation), *m* is the maximum size of the market or ceiling value, and

¹ Mahajan, V., Miller, E., Bass, F.M., "New Product Diffusion Models in Marketing: A Review and Directions for Research," *Journal of Marketing* 54, 1 (January 1990), pp. 1-26.

1 total ISP spending. Dollars (of ISP expenditures) per active user are calculated by dividing
 2 ISP expenditures by 12 (to convert the annual rate to a monthly value) and then dividing
 3 the result by the number of active users. Historical data on dollars per user are presented
 4 in Chart D from April 1999 through April 2001, a total of 25 observations. Chart D shows
 5 that dollars per active user approximately doubled over a two year period, rising from \$9.67
 6 per month in April of 1999 to \$18.61 per month in April of 2001. In fact, from April through
 7 December 1999, dollars per user was roughly constant, with the strong growth beginning
 8 in January 2000. This is consistent with the view presented earlier that the passing of the
 9 Y2K computer problem without major incident may have contributed to the public's desire
 10 for greater technological activity.

11 Dollars per user are modeled as a simple time trend, using all 25 monthly
 12 observations as follows:

$$13 \quad \$/\text{User} = \alpha + \beta \cdot t + \mu$$

14 where α is the intercept (value at time zero), β is the estimate time trend value, t is month
 15 running from 1 to 25, and μ is the regression residual. The regression results, including
 16 estimated coefficients, standard errors, and t-statistics are presented in Table 7 below, as
 17 well as in LR-J-133.

18 **Table 7**
 19 **Results of Regression of Dollars per Active User per Month**

20 Observations	25		
21 Adjusted R-squared	0.9380		
22 F-Statistic	364.2		
23 Coefficient Estimates	Value	Standard Error	T-Stat
24 Intercept	\$7.1434	0.3545	20.15
25 Time Trend	\$0.4551	0.0238	19.08
26			

1 given constrained mark-ups are Media mail, Registered, Insured, and Certified, all of which
2 had constrained mark-ups set at 125 percent.

3 **F. PRC-Based Prices**

4 **1. Mark-Up Pricing Formula**

5 Mark-up pricing establishes rates for the current case based on the mark-ups
6 recommended by the Postal Rate Commission in the R2000-1 case. The PRC
7 recommended mark-ups used in this pricing formula are different from the ones presented
8 in the PRC R2000-1 opinion. First, they are expressed as mark-ups over R2000-1 USPS
9 after-rates marginal cost, presented in the supplemental testimony of Nancy Kay, USPS-
10 ST-45, Docket No. R2000-1. These mark-ups were calculated by dividing the PRC
11 recommended price by the USPS R2000-1 Test Year volume variable costs per piece, and
12 then subtracting 1 to express the result as a mark-up. A second adjustment involves the
13 incremental cost test, discussed shortly.

14 PRC mark-ups were recalculated as mark-ups over USPS after-rates marginal costs
15 to be consistent with both the Ramsey rates (which use marginal cost in their calculation)
16 and the Postal Service's R2001-1 proposed after-rates prices (which use marginal cost in
17 the calculation of net revenues).

18 Mark-up prices for the current case are calculated as follows:

- 19
20 a. The adjusted R2000-1 mark-ups are applied to the Test Year after-rates
21 marginal costs to create an initial set of Test Year after-rates prices.
22
23 b. Given these prices, Test Year after-rates volumes are calculated using the
24 Test Year own- and cross-price elasticities
25
26 c. Given these prices and volumes, Test Year net revenue is calculated
27