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August 21, 2000

VIA HAND DELIVERY

Docket Control
ARIZONA CORPORATION COMMISSION
1200 West Washington
Phoenix, Arizona 85007

Re: Qwest Corporation's 1999 Rate Application, Docket No. T-01051B-99-0105

Dear Clerk:

Enclosed for filing in the above matter are the original and ten copies of the Rebuttal Testimony of Ann Koehler-Christensen, David L. Teitzel, Peter C. Cummings, Jerrold L. Thompson, William E. Taylor, Ph.D., Kerry Dennis Wu, Philip E. Grate, Carl Inouye, George Redding and Scott A. McIntyre. If you have any questions, please do not hesitate to contact me.

Very truly yours,

Jennifer Gresdiville for

Timothy Berg

TB/DP
cc: All Parties of Record

PHX/DPOOLE/1097767.1/67817.172

bcc: Maureen Arnold
Tom Dethlefs

BEFORE THE

ARIZONA CORPORATION COMMISSION

Arizona Corporation Commission
DOCKETED
AUG 21 2000
DOCKETED BY

IN THE MATTER OF THE APPLICATION OF U S WEST COMMUNICATIONS, INC. A COLORADO CORPORATION, FOR A HEARING TO DETERMINE THE EARNINGS OF THE COMPANY FOR RATEMAKING PURPOSES, TO FIX A JUST AND REASONABLE RATE OF RETURN THEREON AND TO APPROVE RATE SCHEDULES	)	DOCKET NO. T-01051B-99-0105

REBUTTAL TESTIMONY OF

ANN KOEHLER-CHRISTENSEN

QWEST CORPORATION

AUGUST 21, 2000

REBUTTAL TESTIMONY OF ANN KOEHLER-CHRISTENSEN

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EXECUTIVE SUMMARY

Directory imputation in this rate proceeding is governed by a 1998 settlement agreement between Mountain Bell and the Arizona Corporation Commission. That settlement agreement provides in pertinent part as follows:

> [T]he Commission, in arriving at the test year operating income of Mountain Bell, will consider the fees and the value of services received by Mountain Bell from USWD under publishing agreements with USWD; that Mountain Bell and the Commission Staff may present evidence in support of or in contradiction to those fees and the value of those services.

In my direct testimony, I provided evidence of the current fees and the value of services received by Qwest from DEX.

Both RUCO and Staff have recommended imputation of $41.3 million, an amount calculated by subtracting $1.7 million in fees received by Qwest from DEX during the test year from a presumptive $43 million imputation amount set forth in the Settlement Agreement. The DOD recommended imputation of approximately $43 million, without recognition or reduction for the value of the fees actually paid by DEX to Qwest during the test year. Staff, RUCO and the DOD have not adequately considered the changes in the services provided under the Qwest/DEX publishing agreement or the changes in the industry that have reduced the value of the services provided to Qwest by DEX.

AT&T has completely ignored the Settlement Agreement. AT&T has erroneously advocated a methodology that has been squarely rejected by the Arizona Court of Appeals. Moreover AT&T has made several calculation errors in applying this methodology. In particular, AT&T has excluded a large portion of

DEX's expenses in its calculation of DEX's profits and it has compounded this error by multiplying pre-tax net revenues by a gross revenue conversion factor.

IDENTIFICATION OF WITNESS

Q. PLEASE STATE YOUR NAME, OCCUPATION AND BUSINESS ADDRESS.

A. My name is Ann Koehler-Christensen. Qwest Corporation (Qwest or the Company), formerly U S WEST Communications, employs me as a Finance Analyst - Regulatory Finance. My business address is 1600 7th Avenue, Room 3008, Seattle, Washington 98191.

Q. HAVE YOU FILED TESTIMONY PREVIOUSLY IN THIS DOCKET?

A. Yes, I filed direct testimony on January 8, 1999 and supplemental testimony on May 2, 2000.

PURPOSE OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to respond to the testimony filed by Michael Brosch on behalf of Staff, Hugh Larkin, on behalf of RUCO, Richard Lee on behalf of the DOD and Lee Selwyn and Susan Gately on

behalf of AT&T with respect to their recommended Yellow Pages imputations. As a general proposition, Qwest, Staff, RUCO and the DOD all agree that the 1988 Settlement Agreement governs directory imputation in this proceeding. However, Qwest disagrees with the interpretation of the Settlement Agreement advanced by Staff, RUCO and the DOD because their interpretation does not recognize that the Settlement Agreement requires a reduction in directory imputation where there has been a reduction in the value of the fees and services provided to Qwest by DEX. AT&T, in contrast, has completely ignored the Settlement Agreement even though it has been enforced by the Arizona Appellate Court. In addition, as set forth more fully below, AT&T has made several significant calculation errors.

REBUTTAL OF STAFF, RUCO AND THE DOD

Q. WHAT DIRECTORY IMPUTATION IS RECOMMENDED BY STAFF AND RUCO?

A. Both Staff witness, Michael Brosch and RUCO witness Hugh Larkin propose directory imputation of $41.3 million. They both arrived at the imputation amount by starting with the presumptive $43 million imputation from the 1988 Settlement Agreement and reducing this amount by the

value of the actual fees received from DEX during the test year. DOD witness Richard Lee, on the other hand, recommends imputation of approximately $43 million. He does not reduce this amount by the value of the fees received from DEX during the test year as recommended by Staff and RUCO.

Q. DOES STAFF, RUCO OR THE DOD CONSIDER THE CURRENT VALUE OF SERVICES RECEIVED BY QWEST FROM DEX?

A. No. Staff and RUCO consider the fees received by Qwest from DEX, but rather than determining the current value of the services received, they rely on the $43 million level from the original agreement. Mr. Larkin's arguments ignore the value of the services and asserts that the Company's position goes against the spirit and intention of the Settlement Agreement. Mr. Brosch argues that it is necessary to put back what was removed in 1984. Mr. Lee argues, in opposition to the 1996 findings of the Arizona Court of Appeals, that the presumptive amount should not be reduced unless the Company demonstrates that the profits generated by DEX have fallen since 1984.

Q. DOES YOUR PRIOR TESTIMONY IN THIS PROCEEDING CONFLICT WITH THE SETTLEMENT AGREEMENT?

A. No, my direct and supplement testimony accepts the Settlement Agreement as the document that governs directory imputation in this case. The Settlement Agreement provides that the transfer of the Yellow Pages will no longer be challenged and that in future rate cases:

> ... the Commission, in arriving at the test year operating income of Mountain Bell, will consider the fees and the value of services received by Mountain Bell from USWD under publishing agreements with USWD; that Mountain Bell and the Commission Staff may present evidence in support of or in contradiction to those fees and the value of those services (emphasis added).

Thus, the Settlement Agreement provides that imputation will be based upon the fees and value of services received by Qwest from DEX. While Mr. Brosch claims the current value is higher than I maintain, he provides no analysis or calculations to support his claim. In fact, the only calculation he provides is based on the profits of DEX, a methodology that the Arizona Appellate Court has squarely rejected. In his testimony Mr. Brosch acknowledges that the Arizona Court of Appeals determined that:

> The imputation method approved in the agreement was not the excess-profit imputation, but rather a method dependent upon proof of "the fees and the value of services received by Mountain Bell from USWD under the publishing agreements with USWD." [1]

Q. WHAT ABOUT THE ESTIMATE OF THE FEES AND VALUE OF SERVICES MR. BROSCH PRESENTS AT PAGES 47 THROUGH 48 OF

1 **HIS TESTIMONY?**

2

3 A. The estimate Mr. Brosch provided is just a roundabout way of calculating
4 directory imputation using DEX's profits in excess of Qwest's authorized
5 rate of return. He has not presented a calculation that is consistent with
6 the language of the Settlement Agreement. In particular, he ignores the
7 changes in the contractual relationship between the Company and DEX,
8 the legislative and regulatory changes that have reduced the value of the
9 services provided and the considerable changes that have occurred in
10 both the publishing and the telecommunications industries. Instead, he
11 attempts to value the services based strictly on the growth in DEX
12 revenues and profits; precisely what the Court of Appeals determined was
13 not appropriate.

14

15 **Q. DO DEX AND THE COMPANY "JOINTLY PRODUCE" DIRECTORIES?**

16

17 A. No. The Company has a contract with DEX to assure that its regulatory
18 obligations are met and that directories are published and delivered to all
19 Qwest's customers. This contract is the same as DEX has with over one
20 hundred CLECs and ILECs. The Company provides DEX with the same

---

[1] U S WEST COMMUNICATIONS, Inc. v. Arizona Corporation Commission, 185 Ariz. 277, 915 P.2d 1232 (App 1996)

information it provides to all publishers. DEX is responsible for the scoping, formatting, production, printing, and delivery of its directories and incurs all the expenses. It is not a joint production and it is not justification for imputing the profits of DEX's directory operations.

Q. MR. BROSCH ASSERTS THAT THE COMPANY SHOULD HAVE OBTAINED COMPETITIVE BIDS FOR THE PUBLICATION OF THE WHITE PAGES. HAS HE PROVIDED ANY EVIDENCE THAT SOLICITATION OF COMPETITIVE BIDS WOULD HAVE RESULTED IN PAYMENTS TO QWEST?

A. No. Mr. Brosch has frequently claimed that the Company should have obtained competitive bids, however he has provided no evidence of what the results of such a bid may have been. He has no evidence, because there are no comparable transactions on which he can rely. None of the RBOCs have ever solicited bids. To my knowledge, no CLECs or ILECs have solicited bids in the last fifteen to twenty years. DEX has been publishing directories as a separate affiliate for the last sixteen years and has never been asked to bid for the right to be the official publisher of a CLEC or ILEC. DEX has publishing agreements with thirteen CLECs and approximately one hundred ILECs primarily because DEX has initiated the discussions that have led to these publishing agreements, although in a

few cases DEX has initially been contacted by the CLEC or ILEC.

Q. HAS ANY PUBLISHER EVER APPROACHED QWEST AND OFFERED TO MEET THE COMPANY'S OBLIGATIONS IN EXCHANGE FOR BEING THE COMPANY'S OFFICIAL PUBLISHER.

A. No publisher has ever approached the Company and the Company has no reason to believe that another publisher would offer the Company an arrangement that would be more favorable than the current publishing agreement with DEX. All publishers have access to the Company's subscriber lists at the FCC-prescribed price, without assuming any obligations. Even Mr. Brosch was not willing to state that another publisher would offer the Company more. He did claim that the Company could contract with another publisher and "at an absolute minimum receive publishing and distribution at no cost in return for the granting of official publisher status." He has provided no evidence to support this assertion.

Q. WHAT ABOUT THE UNIQUE BENEFITS MR. BROSCH HAS LISTED ON PAGE 33 OF HIS TESTIMONY?

A. Mr. Brosch has listed seven "unique benefits" of DEX's affiliation with the

1 Company that he believes justify the continuation of publishing fees or
2 imputation. I list these alleged "benefits" below and comment on each
3 one.

4 *1) Exclusive right to publish, including the use of common trade names and*
5 *marks.*

6 The use of common trade names and marks is irrelevant in that it is a
7 result of having the same corporate owner. The right to use these names
8 and marks are not provided by the Company. There is no exclusive right
9 to publish. If Mr. Brosch means that DEX is the official publisher, this
10 status merely obligates DEX to provide services that other publishers are
11 not obligated to provide. This same term is included in DEX's publishing
12 agreements with other ILECs and CLECs.

13 *2) Public perception that the directory is the sole "official book".*

14 There has been absolutely no evidence presented that establishes that
15 such a public perception actually exists.

16 *3) Exclusive placement and maintenance of USWD directories in Company*
17 *payphones.*

18 To the extent that there is value here, it is value that already flows to the
19 Company and to payphone users. It does not justify additional imputation
20 under the Settlement Agreement.

21 *4) Exclusive provision of billing and collection services.*

22 DEX pays Qwest for this service, billing and collection services are readily

available from numerous sources and no other publisher has requested such a service from the Company.

5) *Exclusive arrangements for purchase of directory advertising account receivable by the Company.*

Purchase of account receivable is simply the method by which Qwest turns over directory advertising revenues collected on behalf of DEX. It is the same process that the Company uses for interexchange carriers.

6) *Benefits of shared corporate management, etc.*

These benefits are a result of being owned by a larger parent company. Most publishers are also part of larger corporate organizations through which similar services and benefits are available.

7) *Referrals of USWC customer inquiries regarding directory advertising.*

DEX pays for these referrals and they are not grounds for additional publishing fees or imputation.

Q. DOES DEX INAPPROPRIATELY EARN AND RETAIN REVENUES FROM SELLING WHITE PAGES ADVERTISING?

A. No. When the directory operations were part of Mountain Bell, the Company did not sell advertising in the white pages. The Company and most other LECs sell premium white pages listings, not white pages advertising. The Company has developed its own listing business by

licensing subscriber listings to all directory publishers [2] as well as marketing Premium White Pages Listings. The test year revenues from Premium White Pages Listings exceeded $17 million and the total directory revenues in Account 5230 was $18.7 million. Publishers, not LECs, sell white pages advertising.

Q. IS IT REASONABLE TO ASSUME THAT THE COMPANY COULD SIMPLY REENTER THE PUBISHING BUSINESS AND EARN A NET PROFIT?

A. It is not reasonable to expect that this could occur in the first few years. Qwest has no trained directory advertising sales force, no paper and printing contracts, no publishing systems or software and no experience in this business. In my opinion, it would take the Company a number of years before it could realize a profit. In the mean time, all the considerable expense associated with publishing and distributing directories would have to be borne by the ratepayers.

Q. HAS THE VALUE OF THE OFFICIAL PUBLISHER STATUS INCREASED OVER THE YEARS?

[2] The Company has long offered its lists to independent publishers. Starting in 1987, the Company provided its lists at the same market rate to all publishers, including DEX. Since December 1999 the

1

2 A. No. In fact, the value of official publisher status has decreased over the
3 years. Court and regulatory decisions have systematically reduced
4 advantages of affiliate or official publisher status. It is for this reason that
5 publishing fees, once common industry practice, have virtually
6 disappeared. Publishers generally meet regulatory obligations in
7 exchange for listings and/or official publisher status. In Qwest's case,
8 DEX meets the Company's regulatory obligations and also pays for
9 subscriber listings.

10

11 **Q. ARE ARIZONA RATEPAYERS ENTITLED TO THE YELLOW PAGES**
12 **BUSINESS?**

13

14 A. No, under the Settlement Agreement, in arriving at the test year operating
15 income, the Commission must consider the "fees and the value of
16 services" received by Qwest from DEX. Arizona ratepayers have no
17 greater entitlement under the Settlement Agreement.

18

19 **REBUTTAL OF AT&T**

20

21 **Q. DOES AT&T WITNESS, LEE SELWYN, BASE HIS IMPUTATION**

Company has made its listings available to all publishers at the FCC-prescribed rates.

RECOMMENDATION ON THE SETTLEMENT AGREEMENT?

A. No, he bases his imputation recommendation on the imputation calculation that the Arizona Appellate Court rejected. Even on that erroneous basis, he has miscalculated the amount of imputation.

Q. WHAT REASONS DOES DR. SELWYN OFFER FOR HIS RECOMMENDED IMPUTATION?

A. Dr. Selwyn offers six basic reasons for his recommended imputation. These are:

1. His version of the historical development of the Yellow Pages business
2. His claim that there was a lack of compensation for the transfer of the business
3. His unsubstantiated claim that there is no competition in the Yellow Pages business
4. DEX's level of profitability
5. His claim that there is a need to support basic residential service in order to achieve and maintain high penetration of local telephone service
6. The recent outcome of the Washington directory case

Q. ARE THESE VALID REASONS FOR IMPUTING $314 MILLION AS RECOMMENDED BY AT&T?

A. Absolutely not. None of the reasons presented by Dr. Selwyn are legitimate grounds for continuing directory imputation because none are recognized by the Settlement Agreement.

Q. HAS DR. SELWYN CONSIDERED THE FEES AND VALUE OF SERVICES RECEIVED BY QWEST FROM DEX?

A. No. Dr. Selwyn doesn't consider the fees and value of services received by Qwest from DEX at all. He simply describes his version of the history of the development of the directory business and relies on Judge Greene's nearly twenty year-old comments about the significant subsidy provided from Yellow Pages. Dr. Selwyn ignores the Settlement Agreement and the changes that have occurred in both the telecommunications and directory publishing industries in the last eighteen years.

Q. WHAT ABOUT DR. SELWYN'S CLAIM THAT NO SPECIFIC COMPENSATION WAS PAID FOR THE TRANSFER OF THE

BUSINESS ASSET FROM THE OPERATING TELEPHONE COMPANY?

A. In commenting on the consideration at the time of the transfer, Dr. Selwyn has chosen to tell only part of the story. He has conveniently ignored the extremely large contribution to rates that Arizona ratepayers have received over the last sixteen years. Since the transfer of the business in 1984, Arizona ratepayers have had their rates reduced by more than $700 million and have received high quality directories at no cost. Thus, it is inaccurate to say the compensation for the transfer has not been paid. Furthermore, imputation is now and has since 1988 been governed by a Settlement Agreement. The Settlement Agreement itself bars any challenge to the transfer.

Q. DOES COMPETITION, OR THE LACK THEREOF, EFFECT THE APPROPRIATE LEVEL OF IMPUTATION?

A. No. Whether or not DEX has competition is not a factor that is considered in the Settlement Agreement.

Q. DOES DEX HAVE COMPETITION?

A. Very definitely. DEX is in the advertising business. Selling directory advertising is the way DEX earns its revenues and covers the

1 considerable expenses associated with publishing their directories. DEX
2 competes with other directory publishers as well as with other forms of
3 advertising such as newspaper, television, radio, direct mail, magazine
4 and outdoor advertising.
5
6 It is amazing that Dr. Selwyn has claimed that DEX is a de facto
7 monopoly, while working for AT&T, the company that originally planned
8 for the directory operations to be placed with AT&T at divestiture because
9 it was a competitive business. Even Judge Greene recognized that
10 Yellow Page advertising was competitive in 1982 when he determined that
11 the Operating Companies should not be prohibited from participating in
12 the Yellow Pages publishing business :

13 Similarly, there is no possibility of improper discrimination by the
14 Operating Companies against competing directory manufacturers
15 since access to the local exchange network is not required for
16 production of a printed directory. In short, the Operating
17 Companies would have little or no ability to discriminate against
18 competitors in the printed directory market, and this restriction thus
19 has no procompetitive justification whatever. [UNITED STATES v.
20 AMERICAN TEL. AND TEL. CO. §82 f. Supp. 131 (1982)]
21
22 Since that time, competition has only increased.
23
24 Dr. Selwyn makes extraordinary claims with respect to the "fortress-level
25 market power" of DEX without providing evidence to support his claims.
26 He refers briefly to two very old cases of directories that were not

successful and draws the erroneous conclusion that "in virtually every instance" an entrant's activity is "limited to a particular market niche that is not directly served by the incumbent Yellow Pages publisher." His claims do not apply to Arizona and should be disregarded.

Q. WHAT TYPE OF COMPETITION DOES DEX FACE IN ARIZONA?

A. There are at least seven other directory publishers that compete with DEX in Arizona. The listings of only five exchanges served by the Company do not appear in directories published by competitive directory publishers. These exchanges are Buckeye, Circle City, Gila Bend, Wickenburg and Yarnell. They consist of less than 1% of Qwest's access lines in Arizona and all but Buckeye are included in the pending sale to Citizens.

The subscriber listings of twenty-two exchanges appear in directories published by DEX and one other publisher, Phone Directory Company (PDC). Sixteen of these twenty-two exchanges are also part of the sale to Citizens. The other six exchanges appear in one or more PDC directory that competes head-to-head with DEX.[3] PDC is a large independent

[3] The Casa Grande, Coolidge, Eloy and Florence exchange listings appear in the DEX Casa Grande directory and the PDC Casa Grande directory as well as the PDC South Central Arizona directory. The Company's Payson exchange listings appear in the DEX Payson directory as well as the PDC Payson directory. The Company's Sierra Vista exchange listings appear in the DEX Cochise County directory as well as the PDC Douglas-Bisbee Regional, Sierra Vista and Southeastern Arizona directories.

publisher that publishes numerous directories in eleven states and a number of Canadian provinces and territories. PDC publishes seventeen directories in Arizona.

The listings of the remaining exchanges served by the Company appear in at least 3 different directories.[4] Some exchange listings appear in as many as seventeen competitive directories published by five different publishers, in addition to the directory published by DEX. Exhibit AKC-1 provides a list of Company exchanges and the directories in which these exchange listings are known to appear. Dr. Selwyn can claim that there is no consequential competition, but he has provided no evidence and he is incorrect.

Q. WHAT ABOUT DR. SELWYN'S CLAIM THAT DEX'S EARNINGS INDICATE THAT THERE IS NO EFFECTIVE COMPETITION?

A. The Arizona Court of Appeals has already determined that the profits of DEX are not an appropriate basis for an imputation, so even if DEX earned higher returns than other companies, it would not bear on imputation in this proceeding. The reality is that, although DEX is a very

[4] For example the Prescott exchange listings appear in the DEX Prescott directory, the PDC Prescott directory and the JHZ Prescott directory.

profitable company, Dr. Selwyn has provided no evidence that DEX is significantly more profitable than other directory publishers. DEX's success as a publisher is certainly not justification for subsidizing residential basic exchange service as recommended by AT&T.

Q. DO YOU ACCEPT DR. SELWYN'S NOTION THAT SUPPORT OF PRIMARY RESIDENTIAL ACCESS AT SOME LEVEL IS NECESSARY IN ORDER TO ASSURE THE ACHIEVEMENT AND MAINTENANCE OF HIGH PENETRATION OF LOCAL TELEPHONE SERVICE?

A. No, I do not. This is outdated logic that is in direct conflict with the direction of the federal Telecommunications Act of 1996. Pricing residential basic exchange service further below cost is not economically efficient; it actually reduces economic efficiency. Dr. William Taylor further addresses this issue in his testimony.

Q. ARE THE ISSUES IN THIS CASE THE SAME AS THE ISSUES ADDRESSED IN THE STATE OF WASHINGTON RECENTLY?

A. No, the Settlement Agreement and the decision from the Arizona Court of Appeals specifically dictate that the fees and value of services received by Qwest from DEX are to be the basis for any directory imputation.

Washington, on the other hand, had a decision from its state Supreme Court that directed the Commission to cease imputation if and when the Company could demonstrate that the Company had received fair market value for the transfer of the directory business.

Q. ARE THE IMPUTATION CALCULATIONS MADE BY AT&T WITNESSES DR. SELWYN AND MS. GATELY ACCURATE?

A. No. Setting aside that AT&T's imputation calculation is not permitted under the Settlement Agreement, AT&T made two significant errors in calculating its recommended directory imputation amount. First, Dr. Selwyn inaccurately derived a pre-tax net income amount. Rather than using the revenues and expenses after they were fully allocated to Arizona, Dr. Selwyn chose to use the yellow pages advertising revenues directly assignable to Arizona less the directly assignable expenses. The problem with this approach is that approximately 97.5% of DEX's revenues are directly assigned to the state level, while only about 30% of DEX's expenses are directly assigned. As a result, Dr. Selwyn's so-called pre-tax net income is drastically overstated. Second, Ms. Gately further compounded Dr. Selwyn's error by applying the Company's gross revenue conversion factor and making no allowance for a reasonable return. The effect of applying the revenue conversion factor is that it inappropriately

increases the already ridiculously high net income number by another 70%.

CONCLUSION

Q. HAVE STAFF, RUCO OR AT&T PRESENTED ANY EVIDENCE THAT THE FEES PAID TO QWEST BY DEX SHOULD BE HIGHER?

A. No, as I explained in my previous testimony, the fees paid by DEX are lower than they were in 1984 because there are fewer services provided under the current publishing agreement and because market conditions and legal decisions since the time of the Settlement Agreement have changed. No one has provided evidence in this case showing that the fees paid by DEX should have been higher.

Q. HAVE THE ADDITIONAL IMPUTATION AMOUNTS RECOMMENDED BEEN BASED ON THE VALUE OF THE SERVICES PROVIDED TO QWEST BY DEX?

A. No. Both Staff and RUCO relied on the presumptive $43 million less the actual fees received. They have provided no evidence that the value of the services provided by DEX to Qwest is different than set forth in my

prior testimony in this proceeding. The evidence they did present related to the profits of DEX and in substance was an attempt to circuitously rely upon the imputation methodology rejected by the Arizona Appellate Court. AT&T also relied on the profits of DEX, but made so many errors and erroneous assumptions that the amount as well as the basis for the imputation must be rejected.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.

BEFORE THE

ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF U S WEST COMMUNICATIONS, INC. A COLORADO CORPORATION, FOR A HEARING TO DETERMINE THE EARNINGS OF THE COMPANY FOR RATEMAKING PURPOSES, TO FIX A JUST AND REASONABLE RATE OF RETURN THEREON AND TO APPROVE RATE SCHEDULES	)	DOCKET NO. T-01051B-99-0105

EXHIBITS OF

ANN KOEHLER-CHRISTENSEN

QWEST CORPORATION

AUGUST 21, 2000

NO COMPETING DIRECTORIES

	USWC EXCHANGE	DEX DIRECTORY (IES)	COMPETING DIRECTORIES	PUBLISHER
1	BUCKEYE	GREATER SW VALLEY	NONE	NONE
2	CIRCLE CITY	WICKENBURG	NONE	NONE
3	GILA BEND	AJO	NONE	NONE
4	WICKENBURG	WICKENBURG	NONE	NONE
5	YARNELL	WICKENBURG	NONE	NONE

ONE COMPETING DIRECTORY

	USWC EXCHANGE	DEX DIRECTORY (IES)	COMPETING DIRECTORIES	PUBLISHER
1	GLOBE	GLOBE	SOUTH CTL ARIZONA	PDC
2	HAYDEN	GLOBE	SOUTH CTL ARIZONA	PDC
3	JOSEPH CITY	WINSLOW	NORTHEASTERN ARIZONA	PDC
4	MIAMI	GLOBE	SOUTH CTL ARIZONA	PDC
5	PAYSON	PAYSON	PAYSON	PDC
6	PIMA	SAFFORD	SOUTHEASTERN ARIZONA	PDC
7	SAFFORD	SAFFORD	SOUTHEASTERN ARIZONA	PDC
8	SUPERIOR	GLOBE	SOUTH CTL ARIZONA	PDC
9	WELLTON	YUMA	YUMA METRO	PDC
10	WHITLOW	GLOBE	SOUTH CTL ARIZONA	PDC
11	WINSLOW	WINSLOW	NORTHEASTERN ARIZONA	PDC
12	YUMA	YUMA	YUMA METRO	PDC

MORE THAN ONE COMPETING DIRECTORY

	USWC EXCHANGE	DEX DIRECTORY (IES)	COMPETING DIRECTORIES	PUBLISHER
1	AGUA FRIA	PHOENIX	PHOENIX SPANISH	AAP
			GREATER MESA	NDC
			GREATER TEMPE	NDC
			PEORIA	NDC
			NORTH SCOTTSDALE	NDC
			SOUTH SCOTTSDALE	NDC
			GLENDALE-PHOENIX WEST	PDC
			SUN CITY WEST-PEORIA	PDC
			CAREFREE-CAVE CREEK	SD
			CHANDLER-GILBERT	SD
			FOUNTAIN HILLS	SD
			MESA	SD
			PARADISE VALLEY	SD
			SUN CITIES-PEORIA	SD
			TEMPE	SD
			AHWATUKEE	SWG
			SUN CITY-SUN CITY WEST	SWG
2	ASH FORK	FLAGSTAFF	FLAGSTAFF	JHZ
			PAGE-LAKE POWELL	KI
			FLAGSTAFF	PDC
			PAGE LAKE POWELL	PDC
			NORTHEASTERN ARIZONA	PDC
			SEDONA-VERDE VALLEY	PDC
3	BENSON	COCHISE COUNTY	DOUGLAS-BISBEE REG	PDC
			SIERRA VISTA	PDC
			SOUTHEASTERN ARIZONA	PDC
4	BISBEE	COCHISE COUNTY	DOUGLAS-BISBEE REG	PDC
			SIERRA VISTA	PDC
			SOUTHEASTERN ARIZONA	PDC

MORE THAN ONE COMPETING DIRECTORY

	USWC EXCHANGE	DEX DIRECTORY (IES)	COMPETING DIRECTORIES	PUBLISHER
5	BLACK CANYON	PHOENIX	PHOENIX SPANISH	AAP
		GREATER NW VALLEY	GREATER MESA	NDC
			GREATER TEMPE	NDC
			PEORIA	NDC
			NORTH SCOTTSDALE	NDC
			SOUTH SCOTTSDALE	NDC
			GLENDALE-PHOENIX WEST	PDC
			SUN CITY WEST-PEORIA	PDC
			CAREFREE-CAVE CREEK	SD
			CHANDLER-GILBERT	SD
			FOUNTAIN HILLS	SD
			MESA	SD
			PARADISE VALLEY	SD
			SUN CITIES-PEORIA	SD
			TEMPE	SD
			AHWATUKEE	SWG
			SUN CITY-SUN CITY WEST	SWG
6	CAMP VERDE	FLAGSTAFF	FLAGSTAFF	JHZ
			PAGE-LAKE POWELL	KI
			FLAGSTAFF	PDC
			PAGE LAKE POWELL	PDC
			NORTHEASTERN ARIZONA	PDC
			SEDONA-VERDE VALLEY	PDC
7	CAVE CREEK	PHOENIX	PHOENIX SPANISH	AAP
		SCOTTSDALE	GREATER MESA	NDC
			GREATER TEMPE	NDC
			PEORIA	NDC
			NORTH SCOTTSDALE	NDC
			SOUTH SCOTTSDALE	NDC
			GLENDALE-PHOENIX WEST	PDC
			SUN CITY WEST-PEORIA	PDC
			CAREFREE-CAVE CREEK	SD
			CHANDLER-GILBERT	SD
			FOUNTAIN HILLS	SD
			MESA	SD
			PARADISE VALLEY	SD
			SUN CITIES-PEORIA	SD
			TEMPE	SD
			AHWATUKEE	SWG
			SUN CITY-SUN CITY WEST	SWG

MORE THAN ONE COMPETING DIRECTORY

	USWC EXCHANGE	DEX DIRECTORY (IES)	COMPETING DIRECTORIES	PUBLISHER
8	CASA GRANDE	CASA GRANDE	CASA GRANDE	PDC
			SOUTH CTL ARIZONA	PDC
9	CHINO VALLEY	PRESCOTT	PRESCOTT	JHZ
			PRESCOTT	PDC
10	COOLIDGE	CASA GRANDE	CASA GRANDE	PDC
		GALLUP, NM	SOUTH CTL ARIZONA	PDC
11	COTTONWOOD	FLAGSTAFF	FLAGSTAFF	JHZ
			PAGE-LAKE POWELL	KI
			FLAGSTAFF	PDC
			PAGE LAKE POWELL	PDC
			NORTHEASTERN ARIZONA	PDC
			SEDONA-VERDE VALLEY	PDC
12	CORONADO	TUCSON	TUCSON SPANISH	AAP
		TUCSON NORTH-NW	TUCSON REG	PC
			SOUTH CTL ARIZONA	PDC
			SUN CITY-VISO-SDLBK	SWG
13	DEER VALLEY	PHOENIX	PHOENIX SPANISH	AAP
		GREATER SW VALLEY	GREATER MESA	NDC
			GREATER TEMPE	NDC
			PEORIA	NDC
			NORTH SCOTTSDALE	NDC
			SOUTH SCOTTSDALE	NDC
			GLENDALE-PHOENIX WEST	PDC
			SUN CITY WEST-PEORIA	PDC
			CAREFREE-CAVE CREEK	SD
			CHANDLER-GILBERT	SD
			FOUNTAIN HILLS	SD
			MESA	SD
			PARADISE VALLEY	SD
			SUN CITIES-PEORIA	SD
			TEMPE	SD
			AHWATUKEE	SWG
			SUN CITY-SUN CITY WEST	SWG
14	DOUGLAS	COCHISE COUNTY	DOUGLAS-BISBEE REG	PDC
			SIERRA VISTA	PDC
			SOUTHEASTERN ARIZONA	PDC

MORE THAN ONE COMPETING DIRECTORY

	USWC EXCHANGE	DEX DIRECTORY (IES)	COMPETING DIRECTORIES	PUBLISHER
15	ELOY	CASA GRANDE	CASA GRANDE	PDC
			SOUTH CTL ARIZONA	PDC
16	FLAGSTAFF	FLAGSTAFF	FLAGSTAFF	JHZ
			PAGE-LAKE POWELL	KI
			FLAGSTAFF	PDC
			PAGE LAKE POWELL	PDC
			NORTHEASTERN ARIZONA	PDC
			SEDONA-VERDE VALLEY	PDC
17	FLORENCE	CASA GRANDE	CASA GRANDE	PDC
			SOUTH CTL ARIZONA	PDC
18	FT MCDOWELL	PHOENIX	PHOENIX SPANISH	AAP
		SCOTTSDALE	GREATER MESA	NDC
			GREATER TEMPE	NDC
			PEORIA	NDC
			NORTH SCOTTSDALE	NDC
			SOUTH SCOTTSDALE	NDC
			GLENDALE-PHOENIX WEST	PDC
			SUN CITY WEST-PEORIA	PDC
			CAREFREE-CAVE CREEK	SD
			CHANDLER-GILBERT	SD
			FOUNTAIN HILLS	SD
			MESA	SD
			PARADISE VALLEY	SD
			SUN CITIES-PEORIA	SD
			TEMPE	SD
			AHWATUKEE	SWG
			SUN CITY-SUN CITY WEST	SWG
19	GRAND CANYON	FLAGSTAFF	FLAGSTAFF	JHZ
			PAGE-LAKE POWELL	KI
			FLAGSTAFF	PDC
			PAGE LAKE POWELL	PDC
			NORTHEASTERN ARIZONA	PDC
			SEDONA-VERDE VALLEY	PDC
20	GREEN VALLEY	NOGALES-GREEN VALLEY	NOGALES SANTA CRUZ	PDC
			GREEN VALLEY	SWG

MORE THAN ONE COMPETING DIRECTORY

	USWC EXCHANGE	DEX DIRECTORY (IES)	COMPETING DIRECTORIES	PUBLISHER
21	HIGLEY	PHOENIX	PHOENIX SPANISH	AAP
		EAST VALLEY	GREATER MESA	NDC
			GREATER TEMPE	NDC
			PEORIA	NDC
			NORTH SCOTTSDALE	NDC
			SOUTH SCOTTSDALE	NDC
			GLENDALE-PHOENIX WEST	PDC
			SUN CITY WEST-PEORIA	PDC
			CAREFREE-CAVE CREEK	SD
			CHANDLER-GILBERT	SD
			FOUNTAIN HILLS	SD
			MESA	SD
			PARADISE VALLEY	SD
			SUN CITIES-PEORIA	SD
			TEMPE	SD
			AHWATUKEE	SWG
			SUN CITY-SUN CITY WEST	SWG
22	HUMBOLDT	PRESCOTT	PRESCOTT	JHZ
			PRESCOTT	PDC
23	MARANA	TUCSON	TUCSON SPANISH	AAP
		TUCSON NORTH-NW	TUCSON REG	PC
			SOUTH CTL ARIZONA	PDC
			SUN CITY-VISO-SDLBK	SWG
24	MARICOPA	CASA GRANDE	CASA GRANDE	PDC
			SOUTH CTL ARIZONA	PDC
25	MUNDS PARK	FLAGSTAFF	FLAGSTAFF	JHZ
			PAGE-LAKE POWELL	KI
			FLAGSTAFF	PDC
			PAGE LAKE POWELL	PDC
			NORTHEASTERN ARIZONA	PDC
			SEDONA-VERDE VALLEY	PDC

MORE THAN ONE COMPETING DIRECTORY

	USWC EXCHANGE	DEX DIRECTORY (IES)	COMPETING DIRECTORIES	PUBLISHER
26	NEW RIVER	PHOENIX	PHOENIX SPANISH	AAP
		GREATER NW VALLEY	GREATER MESA	NDC
			GREATER TEMPE	NDC
			PEORIA	NDC
			NORTH SCOTTSDALE	NDC
			SOUTH SCOTTSDALE	NDC
			GLENDALE-PHOENIX WEST	PDC
			SUN CITY WEST-PEORIA	PDC
			CAREFREE-CAVE CREEK	SD
			CHANDLER-GILBERT	SD
			FOUNTAIN HILLS	SD
			MESA	SD
			PARADISE VALLEY	SD
			SUN CITIES-PEORIA	SD
			TEMPE	SD
			AHWATUKEE	SWG
			SUN CITY-SUN CITY WEST	SWG
27	NOGALES	NOGALES-GREEN VALLEY	NOGALES-SANTA CRUZ	PDC
			GREEN VALLEY	SWG
28	PAGE	FLAGSTAFF	FLAGSTAFF	JHZ
			PAGE-LAKE POWELL	KI
			FLAGSTAFF	PDC
			PAGE LAKE POWELL	PDC
			NORTHEASTERN ARIZONA	PDC
			SEDONA-VERDE VALLEY	PDC
29	PATAGONIA	NOGALES-GREEN VALLEY	NOGALES SANTA CRUZ	PDC
			GREEN VALLEY	SWG

MORE THAN ONE COMPETING DIRECTORY

	USWC EXCHANGE	DEX DIRECTORY (IES)	COMPETING DIRECTORIES	PUBLISHER
30	PHOENIX	PHOENIX	PHOENIX SPANISH	AAP
			GREATER MESA	NDC
			GREATER TEMPE	NDC
			PEORIA	NDC
			NORTH SCOTTSDALE	NDC
			SOUTH SCOTTSDALE	NDC
			GLENDALE-PHOENIX WEST	PDC
			SUN CITY WEST-PEORIA	PDC
			CAREFREE-CAVE CREEK	SD
			CHANDLER-GILBERT	SD
			FOUNTAIN HILLS	SD
			MESA	SD
			PARADISE VALLEY	SD
			SUN CITIES-PEORIA	SD
			TEMPE	SD
			AHWATUKEE	SWG
			SUN CITY-SUN CITY WEST	SWG
31	PRESCOTT	PRESCOTT	PRESCOTT	JHZ
			PRESCOTT	PDC
32	ROBLES	TUCSON	TUCSON SPANISH	AAP
			TUCSON REG	PC
			SOUTH CTL ARIZONA	PDC
			SUN CITY-VISO-SDLBK	SWG
33	SAN MANUEL	TUCSON NORTH-NW	TUCSON SPANISH	AAP
			TUCSON REG	PC
			SOUTH CTL ARIZONA	PDC
			SUN CITY-VISO-SDLBK	SWG
34	SEDONA	FLAGSTAFF	FLAGSTAFF	JHZ
			PAGE-LAKE POWELL	KI
			FLAGSTAFF	PDC
			PAGE LAKE POWELL	PDC
			NORTHEASTERN ARIZONA	PDC
			SEDONA-VERDE VALLEY	PDC
35	SIERRA VISTA	COCHISE COUNTY	DOUGLAS-BISBEE REG	PDC
			SIERRA VISTA	PDC
			SOUTHEASTERN ARIZONA	PDC

MORE THAN ONE COMPETING DIRECTORY

	USWC EXCHANGE	DEX DIRECTORY (IES)	COMPETING DIRECTORIES	PUBLISHER
36	SUPERSTITION	EAST VALLEY	GREATER MESA	NDC
			GREATER TEMPE	NDC
			APACHE JUNCTION	PDC
			CASA GRANDE	PDC
			SOUTH CENTRAL AZ	PDC
			APACHE JUNCTION	SD
			CHANDLER-GILBERT	SD
			MESA	SD
			TEMPE	SD
			AHWATUKEE	SWG
37	TOMBSTONE	COCHISE COUNTY	DOUGLAS-BISBEE REG	PDC
			SIERRA VISTA	PDC
			SOUTHEASTERN ARIZONA	PDC
38	TUBAC	NOGALES-GREEN VALLEY	NOGALES SANTA CRUZ	PDC
			GREEN VALLEY	SWG
39	TUCSON	TUCSON	TUCSON SPANISH	AAP
		TUCSON EAST	TUCSON REG	PC
			SOUTH CTL ARIZONA	PDC
			SUN CITY-VISO-SDLBK	SWG
40	VAIL	TUCSON	TUCSON SPANISH	AAP
		TUCSON EAST	TUCSON REG	PC
			SOUTH CTL ARIZONA	PDC
			SUN CITY-VISO-SDLBK	SWG
41	WILLCOX	COCHISE COUNTY	DOUGLAS-BISBEE REG	PDC
			SIERRA VISTA	PDC
			SOUTHEASTERN ARIZONA	PDC
42	WILLIAMS	FLAGSTAFF	FLAGSTAFF	JHZ
			PAGE-LAKE POWELL	KI
			FLAGSTAFF	PDC
			PAGE LAKE POWELL	PDC
			NORTHEASTERN ARIZONA	PDC
			SEDONA-VERDE VALLEY	PDC

Publisher Key

AAP	Anaya Associated Publishers, Inc.	
JHZ	J. H. Zerbey Newspapers, Inc.	
KI	Kiwi Publishing Co., Inc.	
NDC	National Directory Company	
PC	Pacific Coast Publishing	Note: Recently purchased by WorldPages.com
PDC	Phone Directories Company	
SD	Southern Directory Co., Inc.	
SWG	Southwestern Bell Advertising Group, Inc.	

BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF U S WEST COMMUNICATIONS, INC., A COLORADO CORPORATION, FOR A HEARING TO DETERMINE THE EARNINGS OF THE COMPANY, THE FAIR VALUE OF THE COMPANY FOR RATEMAKING PURPOSES, TO FIX A JUST AND REASONABLE RATE OF RETURN THEREON, AND TO APPPROVE RATE SCHEDULES DESIGNED TO DEVELOP SUCH RETURN.	)	DOCKET NO. T-1051B-99-105 AFFIDAVIT OF ANN KOEHLER-CHRISTENSEN
STATE OF WASHINGTON	) :	ss
COUNTY OF KING	)	

Ann Koehler-Christensen, of lawful age being first duly sworn, depose and states:

1 My name is Ann Koehler-Christensen. I am Finance Analyst – Regulatory Finance of Qwest Corporation in Seattle, Washington. I have caused to be filed written testimony and exhibits in support of USWC in Docket No. T-01051B-99-0105

2. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct to the best of my knowledge and belief.

Further affiant sayeth not.

Ann Koehler-Christensen

SUBSCRIBED AND SWORN to before me this 18th day of August, 2000.

Carl Raymond
Notary Public residing at
Seattle, Washington.

My Commission Expires: 4-13-03

BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF U S WEST COMMUNICATIONS, INC., A COLORADO CORPORATION, FOR A HEARING TO DETERMINE THE EARNINGS OF THE COMPANY, THE FAIR VALUE OF THE COMPANY FOR RATEMAKING PURPOSES, TO FIX A JUST AND REASONABLE RATE OF RETURN THEREON, AND TO APPPROVE RATE SCHEDULES DESIGNED TO DEVELOP SUCH RETURN.	)	**DOCKET NO. T-1051B-99-105**
	)	**AFFIDAVIT OF ANN KOEHLER-CHRISTENSEN**
STATE OF WASHINGTON	) :	**ss**
COUNTY OF KING	)	

Ann Koehler-Christensen, of lawful age being first duly sworn, depose and states:

1. My name is Ann Koehler-Christensen. I am Finance Analyst – Regulatory Finance of Qwest Corporation in Seattle, Washington. I have caused to be filed written testimony and exhibits in support of USWC in Docket No. T-01051B-99-0105

2. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct to the best of my knowledge and belief.

Further affiant sayeth not.

Ann Koehler-Christensen

SUBSCRIBED AND SWORN to before me this 18th day of August, 2000.

Notary Public residing at
Seattle, Washington.

My Commission Expires: 4-13-03

BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF U S WEST COMMUNICATIONS, INC., A COLORADO CORPORATION, FOR A HEARING TO DETERMINE THE EARNINGS OF THE COMPANY, THE FAIR VALUE OF THE COMPANY FOR RATEMAKING PURPOSES, TO FIX A JUST AND REASONABLE RATE OF RETURN THEREON AND TO APPROVE RATE SCHEDULES DESIGNED TO DEVELOP SUCH RETURN	)	DOCKET NO. T-01051B-99-0105

REBUTTAL TESTIMONY

OF

DAVID L. TEITZEL

QWEST CORPORATION

AUGUST 21, 2000

REBUTTAL TESTIMONY OF DAVID L. TEITZEL

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EXECUTIVE SUMMARY

Qwest has proposed a new "Competitive Zones" concept in this Docket that establishes the capability for Qwest to compete on par with its competitors in specific geographic areas of Arizona. Other parties have filed testimony in opposition to this concept and have taken the position that Qwest should continue to be constrained from competing on an equivalent basis with its competitors in targeted areas in which those competitors have chosen to market their services. The parties are wrong. Qwest's proposal is entirely consistent with the objectives of the Telecommunications Act of 1996 (the Act), the FCC's subsequent rulings in support of the Act and existing ACC rules. The overarching goal of the Act is to open markets to competition and to establish a regulatory framework within which competitors may compete vigorously, creatively and on equal footing. Qwest's Competitive Zones proposal establishes a mechanism to promote fair competition in geographic areas in which competition exists. When approved, the Competitive Zones proposal will be to the ultimate benefit of Arizona consumers, who will be rewarded with the fruits of full, open and fair competition in the telecommunications market.

Opposing parties have also chosen to generally oppose the retail services rate design in this Docket, which was proposed to address Qwest's positive revenue requirement in Arizona. Qwest's rate design proposal strikes an appropriate balance between multiple objectives: the need to begin to remove implicit subsidies from Qwest's rate structure

pursuant to the mandates of the Act, the need to establish cost-based prices to facilitate the growth of efficient competition in all markets throughout Arizona, the need to align "deaveraged" wholesale and retail pricing structures to avoid creation of pricing anomalies and rate arbitrage opportunities, the need to simplify and streamline traditional rate structures, the need to comply with existing ACC pricing rules and the need to minimize overall impacts of rate changes upon Arizona customers to the extent practicable. A major recurring theme in the parties' complaints regarding Qwest's retail pricing design is that the loop cost for local exchange services should be "shared" among virtually all retail services Qwest offers in Arizona. This theme is based on seriously flawed economic principles. When Qwest's retail services pricing proposal is viewed in the context of TSRLIC as the proper cost basis, this proposal is in full alignment with the above policy objectives. On this foundation, I respectfully suggest that the Commission dismiss opposing parties' complaints and approve Qwest's retail pricing proposal as filed.

I. INTRODUCTION AND PURPOSE

Q. PLEASE STATE YOUR NAME, OCCUPATION, AND BUSINESS ADDRESS.

A. My name is David L. Teitzel. I am employed by Qwest Corporation (Qwest), formerly known as U S WEST Communications, Inc., as Director-Product and Market Issues. My business address is 1600 7th Avenue, Room 2904, Seattle, WA, 98191.

Q. DID YOU FILE DIRECT TESTIMONY IN THIS DOCKET ON JANUARY 8, 1999 AND SUPPLEMENTAL DIRECT TESTIMONY ON MAY 19, 2000?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. The purpose of my testimony is to address and respond to various issues raised by intervening parties in this Docket, including Mr. William Dunkel, Dr. Francis Collins, Dr. Lee Selwyn, Dr. Ben Johnson and Ms. Arleen Starr.

II. RESPONSE TO MR. WILLIAM DUNKEL

<u>Competitive Zones</u>

Q. MR. DUNKEL CHARACTERIZES QWEST'S COMPETITIVE ZONE PROPOSAL AS A MEANS FOR QWEST, AS THE INCUMBENT LOCAL EXCHANGE CARRIER (ILEC), TO PRICE DISCRIMINATE (DUNKEL,

PAGE 8) AND DISCOURAGE COMPETITION (DUNKEL, PAGES 9, 10). PLEASE COMMENT.

A. Qwest's proposal to have specific wire centers designated as competitive zones is presented in response to an increasingly competitive telecommunications market where alternatives to Qwest's services abound. It is not a design to discriminate between classes of customers or customers situated in different locales; nor is it a proposal intended to block or discourage competition. Rather, Qwest's proposal is an appropriate <u>response</u> to competition in specific geographic areas as competitors enter those areas.

Q. IS THE ABILITY TO PRICE SERVICES DIFFERENTLY BETWEEN VARIOUS GEOGRAPHIC AREAS OF THE STATE BECAUSE OF THE EXISTENCE OF COMPETITION "UNDUE PRICE DISCRIMINATION," AS MR. DUNKEL TERMS IT ON PAGE 6 OF HIS TESTIMONY?

A. No. If it were, Qwest's competitors would be guilty of such discrimination. Qwest's competitors are picking and choosing the most lucrative areas of the state to serve, based on profitability potential. For example, competitive alternatives exist for residence and business consumers in most parts of metro Phoenix; however, Qwest is the only provider serving consumers in outlying areas of the the city as well as the state where significantly more investment is required. Not only are Qwest's competitors electing to serve limited geographical areas of the *state*, they

are also electing to serve only select sub-segments of certain *cities*. For example, a competitor such as AT&T Local Service may only serve business customers in downtown Phoenix. Cox has taken a very systematic approach to rolling out service, limiting availability to one area until it is ready to move on to the next. In this proceeding, Qwest is requesting the ability to respond to the competition *where it is occurring* with the flexibility necessary to compete.

Q. MR. DUNKEL MAINTAINS THAT GIVING QWEST THE PRICING FLEXIBILITY IT IS REQUESTING WILL ALLOW IT TO INCREASE RATES IN AREAS OF THE STATE WHERE EFFECTIVE COMPETITION DOES NOT EXIST. IS THIS AN ACCURATE ASSESSMENT?

A. No. Qwest remains regulated by this Commission. Prices for regulated services outside of the competitive zones will continue to be set by the Commission.

Q. WILL QWEST BE ABLE TO ESTABLISH RATES AND CHARGES WITHIN THE COMPETITIVE ZONES WITHOUT COMMISSION APPROVAL, AS MR. DUNKEL SUGGESTS ON PAGE 8 OF HIS TESTIMONY?

A. As indicated above, Qwest remains a regulated entity, subject to Commission oversight. Qwest will be able to implement pricing between

proposed minimum and maximum rate bands without formal Commission approval; however, all regulated aspects of Qwest's business remain under the ultimate authority of the Commission.

Q. WHAT PROBLEMS DOES MR. DUNKEL ANTICIPATE WILL ARISE IF QWEST IS GRANTED COMPETITIVE ZONE FLEXIBILITY?

A. Frankly, I am unclear as to what Mr. Dunkel's position is relative to the effect competitive zones will have on competition. On Page 10, Lines 6-7, he indicates Qwest could choose to underprice its competitors, thus "discouraging" them from competing. In another area of his testimony (Page 23, Lines 6-13), Mr. Dunkel states that a major problem with Qwest's proposal is that, if approved, the Company could double most of its rates. On one hand, it appears he is concerned the company will respond to competition by lowering rates and on the other hand, he fears the Company will increase rates. Mr. Dunkel appears to prefer that this Commission continue to use its regulatory authority to govern price increases and price decreases in the traditional sense for fear that Qwest may abuse any pricing freedom afforded it. However, in doing so, he overlooks the most important characteristic of a competitive market –i.e, the power of the market itself. The market will determine efficient prices. Qwest will lose market share if it attempts to sustain prices that are not market-based in Arizona markets subject to competition.

Q. ISN'T IT TRUE THAT QWEST'S COMPETITORS CURRENTLY HAVE AN ADVANTAGE IN THE MARKETPLACE?

A. Yes. As indicated above, Qwest's competitors are selective in determining the areas of the state they will serve. Competitors also have the ability to price under maximum rates while Qwest is required to provide thirty days notice of most price changes.[1] Competitors are also able to offer a broader array of services than Qwest, due to the prohibition against interLATA entry. While granting competitive zone status to selected markets will not completely level the competitive playing field, it will afford Qwest reasonable flexibility in attempting to retain existing customers and recapture former customers.

Q. HAVE QWEST'S COMPETITORS USED THE REGULATORY CONSTRAINTS QWEST MUST ADHERE TO IN ORDER TO FURTHER THEIR MARKETPLACE ADVANTAGE?

A. Yes. As Mr. Dunkel points out on Page 9 of his testimony, Cox offers non-cable customers telephone service for $13.00 per month, undercutting the Qwest residential line rate of $13.18. The differential becomes more pronounced if the consumer subscribes to Cox cable and

[1] Services already classified by the Commission as "competitive" have maximum price bands established which Qwest may price beneath. Qwest is not able to increase non-price banded rates or increase maximum price bands outside of a rate case, or as provided by R14-2-1110.

telephone service - $11.75 for the first line and $6.50 for the second line. These prices are significantly lower than Qwest's residential access line service which is currently priced below cost. Mr. Dunkel's hypothetical example of price undercutting on Pages 9 and 10 of his testimony are actually quite real – the actions of the players he identified are reversed. Rather than Qwest possibly undercutting Cox if competitive zone flexibility is granted, Cox is currently competing with Qwest by undercutting services that are already priced below cost. Under today's regulatory rules, there is very little Qwest can do to respond. Qwest is not proposing competitive zone pricing flexibility to discourage competition; rather, it is asking for the ability to respond to competition under the same conditions currently enjoyed by its' competitors.

Q. AT PAGE 9 OF HIS DIRECT TESTIMONY, MR. DUNKEL IMPLIES THAT QWEST COULD USE COMPETITIVE ZONE PRICING FLEXIBILITY TO "...ASSURE COMPETITORS WERE NOT SUCCESSFUL." DOES HE OFFER FACTUAL SUPPORT FOR THIS ALLEGATION?

A. No. In fact, I'm sure Mr. Dunkel is aware that a total of 49 wire centers in Oregon are currently classified as competitive zones, and local competition is flourishing in that state. The specter of anticompetitive conduct that Mr. Dunkel attempts to construct simply is not founded in fact.

Q. DOES MR. DUNKEL OFFER AN ALTERNATIVE TO QWEST'S COMPETITIVE ZONE PROPOSAL?

A. Yes. He suggests that prices in different geographic areas not be allowed to vary "by an amount greater than the variation that is justified by any variation in the cost of providing service. If the regulatory structure allows price flexibility or "revenue neutral" restructuring, any such restructure may not increase the rate differential between geographic areas that is incorporated in the specifically approved ACC rates, without specific ACC approval."

Q. WHAT IS YOUR REACTION TO MR. DUNKEL'S PROPOSAL?

A. Again, Mr. Dunkel has ignored the primary tenet of competition – that market forces are the appropriate "regulators" in a competitive environment. Mr. Dunkel's first proposal, if I understand it correctly, would specify that market prices be based solely on cost. His second proposal appears to require that existing price differentials between geographic areas be carried forth into the competitive marketplace under explicit Commission control. This "micromanaging" would result in this Commission paying mere lip service to the stated goals of the Telecommunications Act of 1996 (Act), i.e., "<u>to promote competition and reduce regulation</u> in order to secure lower prices and higher quality

services for American telecommunications consumers and encourage the rapid deployment of new telecommunications technologies." (emphasis added) Such oversight is unnecessary and, in fact, contrary to the facilitation of a fully functioning competitive marketplace.

Q. ON PAGE 11 OF HIS TESTIMONY, LINES 10-11, MR. DUNKEL STATES THAT IF A COMPETITOR OFFERS EVEN ONE RESIDENTIAL SERVICE IN A COMPETITIVE ZONE, ALL RESIDENTIAL SERVICES ARE DEEMED COMPETITIVE. WHAT IS YOUR REACTION TO THIS STATEMENT?

A. Mr. Dunkel has taken the competitive zone proposal to the extreme. The scenario he lays out in his testimony is unrealistic and not reflective of the competitive marketplace. Competitors have become full service providers, offering consumers a wide range of telecommunications products. As Mr. Dunkel points out on Page 30 of his testimony, "competitors evaluate the total revenue opportunities, not just the revenues from only one service (basic exchange)." Cox reinforces this strategy and has publicly stated its bundling goal: "Utilize our ability to offer integrated bundles of services as a competitive advantage to drive incremental customer profitability." (See Exhibit DLT-1). The competitors offering service in the competitive zones proposed in my Direct and Supplemental Direct are not offering a single service. They are offering a

full slate of services including local exchange, features, interstate and intrastate long distance, Internet services, and more. Mr. Dunkel's concern that approval of a competitive zone will provide pricing flexibility for services that are not competitive is not reflective of the current full-service provider marketplace.

In addition, the wire centers identified in my direct testimony as possessing a sufficient degree of competition to warrant classification as competitive zones all have a large number of customers currently being served by facilities-based alternative providers. To the extent Qwest desires additional wire centers to be so classified in the future, the Commission will continue to have the authority to review the petition and either approve or deny it on its merits. I agree with Mr. Dunkel that it would be extremely unlikely that the Commission would approve a competitive zone request on the basis of Qwest's loss of one residential line to a competitor in that wire center. The Commission should rest assured that Qwest's factual support for such a request would be much more robust, similar to the factual support provided in my direct testimony in this Docket.

Q. ON PAGE 12 OF HIS TESTIMONY, MR. DUNKEL MAINTAINS THAT QWEST'S COMPETITIVE ZONE PROPOSAL DOES NOT CONFORM

TO COMMISSION RULES FOR COMPETITIVE CLASSIFICATION. DO YOU AGREE?

A. No. Rule 14-2-1108(A) specifies the method a telecommunications company may follow to request classification of services as competitive:

> A telecommunications company may petition the Commission to classify as competitive any service or group of services provided by the company.

Rule 14-2-1102 defines competitive services as "any telecommunications service where customers of the service within the relevant market have or are likely to have reasonably available alternatives."

Within that same rule, relevant market is defined as:

> Where buyers and sellers of a specific service or product, or of a group of services or products, come together to engage in transactions. For telecommunications services, the relevant market may be identified on a service-by-service basis, a group basis, and/or by geographic location.

Qwest's competitive zone proposal, which requests competitive classification for groups of services within specified geographic relevant markets complies completely with Commission rules.

Q. IN FOOTNOTE 17 OF HIS TESTIMONY, MR. DUNKEL INDICATES THAT HE IS NOT IMPLYING OR CONTENDING THAT QWEST INTENDS TO DOUBLE ITS RATES. PLEASE COMMENT.

A. In several places throughout his testimony, Mr. Dunkel raises the issue of the price cap proposed in my Direct testimony. I proposed the price cap (doubling existing or proposed rates) as a means of addressing Commission and consumer concern about potential price increases if the competitive zone proposal is approved. It is not Qwest's intent to increase rates to the identified price caps – again, market forces will best determine appropriate prices – but the caps will provide an outside limit for any future price increases.

Q. MR. DUNKEL TERMS QWEST'S COMPETITIVE ZONE PROPOSAL AS "EFFECTIVELY PRICED DEREGULATION."[2] IS THAT A CORRECT ASSESSMENT?

A. No. Competitive zones will not deregulate any services offered by Qwest.

Q. MR. DUNKEL INDICATES THAT RESALE AND UNBUNDLED NETWORK ELEMENTS (UNE) SERVICES SHOULD NOT BE

[2] Dunkel Testimony, Page 16, Line 15.

CONSIDERED "EFFECTIVE" COMPETITION (PAGE 16, LINES 13-14). DO YOU AGREE?

A. No. Under the terms of the Act, Qwest and other incumbent local exchange carriers are required to resell retail services at wholesale rates and to furnish network elements on an unbundled basis to other telecommunications providers. Earlier in this testimony, I outlined the stated purpose of the Act as being, among other things, to promote competition. Resale, interconnection, and unbundling of network elements were defined by Congress as means to accomplish the Act's stated goals. They are all viable forms of competition.

Q. MR. DUNKEL INDICATES THAT THE DATA QWEST HAS PROVIDED DOES NOT DEMONSTRATE THAT SUFFICIENT COMPETITION EXISTS TO WARRANT COMPETITIVE ZONE CLASSIFICATION OF SPECIFIED WIRE CENTERS. (PAGES 19 – 22) PLEASE COMMENT.

A. Qwest's request for classification of specific wire centers as competitive zones was based solely on the presence of a facilities-based alternative provider. In other words, although Qwest proposed three criteria that could qualify a wire center as a competitive zone[3], it very conservatively based its competitive zone proposal on the existence of facilities-based

[3] Qwest proposed that before a competitive zone could be established, at least one of the following criteria must be met: 1) A competitor has facilities in place and is marketing or offering services in competition

1 competition. The wire centers that have been proposed as competitive
2 zones are those wire centers where Qwest has identified the presence of
3 a facilities-based competitor. The information provided in data requests
4 and supplemental direct testimony relative to line loss, number of resold
5 lines, number of unbundled loops sold, etc. further substantiate the extent
6 of such competition.
7
8 **Q. ON PAGE 17, LINES 20-23, MR. DUNKEL STATES THAT THE**
9 **NUMBER OF PORTED LOCAL TELEPHONE NUMBERS IS ONE OF**
10 **THE BEST GAUGES AVAILABLE TO DETERMINE THE MAGNITUDE**
11 **OF LOCAL EXCHANGE COMPETITION. DO YOU AGREE?**
12 A. I agree that the number of ported telephone numbers can be used as one
13 indicator of the extent of local competition. The number of alternative
14 provider ported telephone numbers represents former Qwest customers
15 presently served by an alternative provider. Qwest has no specific
16 information on how the quantity of telephone numbers ported represents
17 the number of lines lost to competition. Qwest cannot quantify what
18 services or how many lines the customer now subscribes to from an
19 alternative provider. Qwest only knows that a customer who previously
20 purchased service from Qwest is now purchasing such services from an
21 alternative provider.

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with Qwest; 2) A reseller is marketing or offering service in competition with Qwest; or 3) A competitor is

Q. WHY DOESN'T QWEST KNOW THE NUMBER OF LINES LOST TO COMPETITIVE PROVIDERS?

A. While the combination of resold lines and ported numbers represents the best measure of competition loss information available to Qwest, it does not fully capture the total competitive loss experienced by Qwest. For example, when a business customer switches to a competitive provider, it may port telephone numbers used externally with the public while changing telephone numbers for lines that are only used internally. The ported number count does not include telephone numbers associated with new and/or additional lines purchased by customers from alternative providers. It also does not include lines for new customers that were never Qwest customers who do not require a number to be ported.

Q. ON PAGE 24 OF HIS TESTIMONY, LINES 1-2, MR. DUNKEL MAINTAINS THAT THE EXHIBITS YOU HAVE PROVIDED DEMONSTRATING COMPETITION FOCUS PRIMARILY ON SERVICES ALREADY DEEMED COMPETITIVE. PLEASE RESPOND.

A. On this point Mr. Dunkel is simply wrong. Mr. Dunkel specifically cites two exhibits to my Direct testimony – Exhibit 5 and Exhibit 17. He states that Exhibit 5 contains competitive information relating to Centrex service

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marketing or offering services through the provision of unbundled network elements purchased from Qwest.

which is already classified as competitive. He neglects to mention that the Exhibit also demonstrates that AT&T is offering business access lines in competition with Qwest. He then points to Exhibit 17 which contains toll service advertisements, toll also being a service already deemed competitive by the Commission. He concludes by saying that "all this evidence supports is maintaining the current competitive classification of these services in Arizona which is not an issue."

Exhibit 17 was not provided in support of the competitive zone proposal. It was used in my Direct testimony to demonstrate the existence of dial-around providers, in support of the rate design I am advocating for toll services. Mr. Dunkel evidently has dismissed without merit the 14 exhibits attached to my Direct Testimony, the 44 exhibits attached to my Supplemental Direct Testimony, and the plethora of newspaper articles, trade journal articles, data pulled from Internet web sites, and other competitive intelligence provided in response to data requests[4] which demonstrate the extremely competitive environment in the Phoenix and Tucson areas. Qwest is not overstating the level of competition as Mr. Dunkel infers on Pages 24 and 25; if anything, the degree of competitive inroads I've outlined in my testimony is understated since competitors do not freely share sensitive marketing data.

[4] For example, see Qwest responses to RUCO 06-07, 06-08.

Q. ON PAGE 31 OF HIS TESTIMONY, MR. DUNKEL TAKES ISSUE WITH QWEST'S PROPOSAL THAT ALLOWS THE PRICE FOR A SPECIFIC SERVICE TO BE BELOW TOTAL SERVICE LONG RUN INCREMENTAL COST (TSLRIC). PLEASE COMMENT.

A. The competitive zone proposal would allow Qwest to package services in a manner similar to what its competitors are offering which may necessitate the pricing of a particular service below its TSLRIC. However, as long as the total revenue for the customer or group of customers is above its TSLRIC, this would be an acceptable pricing mechanism. This concept allows Qwest to compete on a level playing field with its competitors, as Mr. Dunkel points out on Page 30, Lines 12-15, of his testimony:

> A company considering offering service to a residential area would consider the revenues they would expect to receive from all services, including enhanced services, toll services, basic exchange service, switched access service to other carriers, etc.

The competitive zone would provide Qwest with this same flexibility in those areas where it is experiencing competition.

1 **Q. MR. DUNKEL MAINTAINS THAT THE TIME FRAME PROPOSED FOR**
2 **THE COMMISSION TO REACT TO A COMPETITIVE ZONE PROPOSAL**
3 **IS UNREASONABLE. DO YOU AGREE?**
4 A. No. The proposal outlined in my Direct testimony, whereby the
5 Commission will respond to a Qwest request for competitive zone
6 classification within 15 days of notification or the area automatically
7 becomes a competitive zone is reasonable in light of the rapidity with
8 which competition is advancing in the state. It also streamlines existing
9 regulatory practices and removes administrative functions for the
10 Commission which are unnecessary in a competitive environment.
11
12 **Q. MR. DUNKEL OPPOSES QWEST'S PROPOSAL TO HAVE NEW**
13 **SERVICES AUTOMATICALLY CLASSIFIED AS COMPETITIVE.**
14 **PLEASE COMMENT.**
15 A. The existing process for classifying new Qwest services as competitive on
16 a product-specific basis is resulting in significant delays – at times over a
17 year. This may translate to a delay in making new services available to
18 Qwest customers, placing the company at a distinct competitive
19 disadvantage, as Qwest's competitors have the freedom to have new
20 services automatically classified as competitive upon introduction. For
21 customers to realize the fruits of genuine competition, including

1 innovations in the market, Qwest must be afforded regulatory parity to its
2 competitors.
3
4 **Q. MR. DUNKEL ALSO OPPOSES RELAXATION OF REGULATORY**
5 **REQUIREMENTS FOR PROMOTIONS. IS THIS CONSISTENT WITH**
6 **FACILITATING A FULLY FUNCTIONING COMPETITIVE**
7 **TELECOMMUNICATIONS MARKETPLACE?**
8 A. No, it is not. Qwest is simply asking for the same flexibility its competitors
9 already enjoy relative to promotional offerings. Approval of Qwest's
10 proposal for promotions will eliminate costly regulatory oversight that is no
11 longer necessary or appropriate. If Qwest is allowed to make its
12 promotional offerings available to consumers on an equitable basis with
13 its competitors, competition will flourish and the benefits associated with
14 such competition will accelerate for Arizona consumers.
15
16 **Contribution Analysis**
17
18 **Q. HAVE YOU REVIEWED MR. DUNKEL'S "CONTRIBUTION ANALYSIS"**
19 **SUMMARIZED AT PAGE 45 OF HIS DIRECT TESTIMONY AND**
20 **OUTLINED IN DETAIL IN SCHEDULE WDA-19?**
21 A. Yes.
22

Q. IS THIS ANALYSIS A REASONABLE ASSESSMENT OF THE LEVEL OF CONTRIBUTION GENERATED BY RESIDENTIAL BASIC EXCHANGE SERVICES IN ARIZONA?

A. No. This analysis is founded entirely on the erroneous assumption that costs for the local loop can be shared among all services potentially using the loop. Dr. William Taylor and Mr. Jerrold Thompson discuss in their rebuttal testimonies on behalf of Qwest why the loop costs cannot be treated as shared costs.

Q. IF LOOP COSTS ARE TREATED AS DIRECT COSTS OF PROVIDING RESIDENTIAL BASIC EXCHANGE SERVICE, IS MR. DUNKEL'S "CONTRIBUTION ANALYSIS" VALID?

A. No. In this instance, the residential basic exchange service rate is substantially lower than the TSLRIC costs for this service filed by Mr. Thompson.

<u>Rate Design</u>

Q. AT PAGE 64, MR. DUNKEL OPPOSES QWEST'S REQUEST TO INCREASE RESIDENTIAL SERVICE PRICES DUE TO HIS VIEW THAT RESIDENTIAL LOOP COSTS SHOULD BE SHARED WITH OTHER SERVICES. WOULD YOU COMMENT?

A. Yes. As discussed in Mr. Thompson's testimony, the appropriate cost basis for basic exchange services is TSLRIC. Dr. Taylor discusses a variety of factors that render Mr. Dunkel's cost allocation arguments invalid. Qwest's proposal to increase residential basic exchange prices is in complete alignment with Commission, FCC and legislative directives to move below-cost prices toward cost and to make remaining implicit subsidies explicit.

Q. MR. DUNKEL SUGGESTS A REDUCTION IN THE BUSINESS BASIC EXCHANGE RECURRING RATE OF $2.00 IN ARIZONA.[5] IS THIS REDUCTION APPROPRIATE?

A. No. The proposal discussed in my direct testimony simply blends the Dial Tone Line and business local usage rate elements into a single price, with no net change in the price level. If business basic exchange prices are decreased, the burden will fall to residential basic exchange rates to absorb an additional rate increase to contribute to Qwest's revenue requirement.

Q. MR. DUNKEL COMPLAINS AT PAGE 71 THAT QWEST'S PROPOSAL TO ADJUST ZONE INCREMENT CHARGES CONFLICTS WITH PUBLIC POLICY REQUIREMENTS, AND CITES 254(b)(3) OF TA 1996,

[5] Dunkel direct, P. 78

WHICH REQUIRES THAT CONSUMERS IN RURAL AREAS HAVE SERVICES WITH SIMILAR FUNCTIONALITY AND PRICE AS SERVICES PROVIDED TO CUSTOMERS IN URBAN AREAS. WOULD YOU COMMENT?

A. Yes. The section of TA 1996 cited by Mr. Dunkel specifically states that prices for services in rural areas should be "...reasonably comparable to rates charged for similar services in urban areas." The term "reasonably comparable" is one which provides the Commission significant latitude in determining appropriate rate levels throughout the state. Additionally, TA 1996 and the FCC, as an agent of the Legislature, also require incumbent LECs to deaverage prices for loop-based services and to remove implicit subsidies between services. Unfortunately, Mr. Dunkel offers the Commission no guidance as to how the latter two requirements should be incorporated into its deliberations regarding Qwest's proposed zone increment structure. In reality, Qwest's zone increment proposal produces prices that are deaveraged, are cost-based and that remove implicit subsidies. This proposal is in complete alignment with state and federal guidelines.

Q. IF THE COMMISSION SHOULD FIND IN PENDING DOCKET NO. T-0000A-00-0194 THAT UNE LOOP PRICES SHOULD BE DEAVERAGED IN A MANNER OTHER THAN THE PROPOSED BASE

RATE/ZONE INCREMENT STRUCTURE, HOW WOULD YOU PROPOSE TO MODIFY THE RETAIL ZONE INCREMENT PRICING PROPOSAL?

A. Qwest believes its Base Rate/Zone Increment deavearaging proposal for both wholesale and retail services is appropriate, cost-based and in full compliance with regulatory requirements. However, if the Commission finds that another wholesale UNE loop deaveraging structure, such as grouping wire centers into defined rate groups, is appropriate, the retail zone increment proposal in my direct testimony must be modified to mirror the Commission-ordered structure. Contrary to Mr. Dunkel's arguments, the loop facility cost cannot be shared amongst multiple services, and retail and wholesale prices must continue to be set in reasonable relationship to one another. Failure to do so will result in pricing anomalies which will distort normal competitive growth in Arizona: competitors will be attracted to urban, low cost areas to take advantage of reduced deaveraged UNE prices available there, but will be driven away from rural areas due to the high UNE prices in those areas in relation to the low Qwest retail prices for basic exchange services. This outcome is certainly contrary to the vision of the FCC, Congress and this Commission toward stimulating viable competition in all areas of the state.

Q. AT PAGE 80, MR. DUNKEL COMPLAINS THAT QWEST'S INCLUSION OF TOLL PRICE CHANGES IN ITS RATE DESIGN IS INAPPROPRIATE, SINCE TOLL SERVICES ARE FLEXIBLY PRICED IN ARIZONA. WOULD YOU COMMENT?

A. Yes. Mr. Dunkel has missed the point. Qwest has presented a well supported, positive revenue requirement in this Docket. IntraLATA Toll service revenue is still considered to be a part of Qwest's Arizona rate base. It is not deregulated. Mr. Dunkel is correct: Qwest could have reduced Toll prices during the pendency of this rate case without including them in the overall rate design of this Docket. However, doing so would have increased the revenue requirement by the precise amount I identified in my direct testimony, creating a need to adjust prices for other services to offset the Toll price reductions. Since the revenue requirement effect of Toll price reductions is the same whether the reductions are included in the overall rate case rate design or accomplished separately, Qwest believes the customer impact of price changes is the major consideration in including the Toll rate changes in this Docket. Prices for various services will be increasing and decreasing as a result of this rate case, and customer confusion and dissatisfaction can be minimized by implementing all price changes concurrently.

1 **Q. AT PAGE 81, MR. DUNKEL ALLEGES THAT QWEST CAN EXPECT TO**
2 **REALIZE AN INCREASE IN TOLL REVENUES RESULTING FROM ITS**
3 **PROPOSED DECREASE IN TOLL PRICES. DO YOU AGREE?**
4 A. No. Qwest has not experienced Toll call volume increases in response to
5 Toll price decreases. In the past, prior to the myriad of Toll competitors
6 that now occupy the interLATA and intraLATA toll markets, the effects of
7 price elasticity could be seen in demand for Toll. If a Toll price was
8 reduced, an increase in calling volume would follow. However, the Toll
9 market is no longer a monopoly market. Not by a long shot.
10
11 Toll competitors are now offering prices as low as $0.05 per minute, and
12 new technologies, such as Internet Telephony, are introducing alternative
13 Toll services for prices even lower. For example, Microsoft and
14 Net2Phone, the country's leading Internet Telephony provider, are now
15 offering a promotion for free long distance calling over Net2Phone's
16 network. There is heavy advertising in the market for these attractive
17 offers, which has changed customers' expectations as to what reasonable
18 Toll prices should be. When Qwest reduces a Toll price, such as the
19 reduction in Residential Toll off-peak prices proposed in this Docket from
20 $0.15 to $0.10 (a 33% decrease) an economist would expect that a large
21 surge in demand would be the result. However, customers' price
22 expectations have changed. This price reduction will not generate new

demand for Qwest Toll, but will reduce the rate of erosion of Qwest Toll minutes to competitors. Mr. Dunkel's suggestion that price elasticity should be somehow factored into Qwest's Toll revenue impact calculations should be rejected.

Q. AT PAGE 88, MR. DUNKEL ALLEGES THAT QWEST HAS MISCALCULATED THE REVENUE IMPACTS ASSOCIATED WITH THE PROPOSED DIRECTORY ASSISTANCE PRICE CHANGES IN THIS DOCKET. DO YOU AGREE WITH HIS CONCLUSIONS?

A. No. There is no miscalculation. The revenue impact displayed in Exhibit 48 of my Supplemental Direct testimony is accurate, and is based upon the prescribed test period for this rate case of full year 1999. Contrary to Mr. Dunkel's allegations, the elimination of the free D.A. call allowance is accounted for in the revenue impact calculations. The net annual revenue impact of Qwest's D.A. proposal in this Docket is $19,743,296. These calculations are also contained in Qwest's response to data request WDA 33-5.

Q. AT PAGE 91, MR. DUNKEL RECOMMENDS THAT NON-PUBLISHED AND NON-LISTED RATES CONTINUE UNCHANGED AT CURRENT RATE LEVELS. DO YOU AGREE?

A. No. The price increases proposed in my direct testimony are appropriate and reasonable. These services are discretionary to customers, similar to prices for Custom Calling services, and have significant value to customers desiring the privacy these services afford. Revenues associated with the proposed price increases for these services contribute to Qwest's overall revenue requirement in Arizona. If the proposed price increases for these services are removed from the pricing proposal, the revenue shortfall must be shifted to other services remaining in the docket.

Q. AT PAGE 108 OF HIS DIRECT TESTIMONY, MR. DUNKEL SUGGESTS THAT "...RESIDENTIAL BASIC EXCHANGE RATES, WHICH ARE AVAILABLE WITHOUT REQUIRING THE CUSTOMER TO DECLARE AND PROVE THAT THEY HAVE LOW INCOME, SHOULD BE AS REASONABLY PRICED AS POSSIBLE." DOES THIS ARGUMENT HARKEN TO A TIME WHEN TELEPHONE MONOPOLIES WERE STILL IN PLACE?

A. Yes. Mr. Dunkel seems to dismiss targeted assistance plans for customers with limited means, and instead, suggests that local exchange prices should be driven to very low levels to ensure affordability for all. This was a valid concept in the past, but no longer fits in the post-TA 1996 environment. All prices must now be moved toward cost. Implicit

subsidies must be identified and made explicit. Prices must be deaveraged and be cost-based. These things must be accomplished through a combination of rate rebalancing and High Cost Fund support, and Telephone Assistance and Link Up Plans will continue to be available to provide additional support to low income households to optimize universal service. Qwest agrees that residential basic exchange service must continue to be available at affordable rates, but the traditional, subsidy-laden model for accomplishing that goal is no longer viable.

Q. AT PAGE 110, MR. DUNKEL STATES "...IT IS OBVIOUS THAT USWC WOULD NOT PROPOSE A STRATEGY THAT WOULD ACTUALLY RESULT IN INCREASING COMPETITION TO ITSELF. IT IS NOT IN USWC'S INTEREST TO PROPOSE A PRICE STRUCTURE THAT WOULD ATTRACT COMPETITION TO ITSELF." IS HIS CONCLUSION ACCURATE?

A. No. Qwest is bound by the dictates of TA 1996 to open its markets to competition. This is to be accomplished by offering its network components to competitors on an unbundled basis, by adjusting prices to remove implicit subsidies and to deaverage. Qwest is precisely complying with these guidelines in its price design in this rate case. Competition has already entered the urban markets in Arizona, and will clearly enter the rural markets in the state once competitors have the

economic incentive to do so. It is irrelevant whether a price design proposed by Qwest does or does not "attract competition to itself." The fact is that Qwest is obligated to set forward a price design that complies with legal and regulatory guidelines designed to promote competitive growth throughout the state. Qwest has done exactly that in its proposal in this docket.

III. RESPONSE TO DR. FRANCIS COLLINS

Competitive Zones

Q. IN HIS TESTIMONY, IT APPEARS DR. COLLINS HAS RELIED UPON DATA FURNISHED BY QWEST IN TESTIMONY AND DATA REQUEST RESPONSES TO ESTABLISH QWEST'S MARKET SHARE. IS THIS APPROPRIATE?

A. No. In my Direct and Supplemental Direct testimony, as well as in responses to data requests in this proceeding, I provided several statistics to be used in documenting the presence of competition in the specified wire centers I am proposing become competitive zones. Included were access lines lost, number of resold lines, and number of telephone numbers ported. I did not state nor intend that these figures should be added together to compute a Qwest "market share" calculation, contrary to Dr. Collins' claim on Page 3, Lines 13 – 18 of his testimony. Dr. Collins

came to that conclusion independently and then accused Qwest of inaccurate reporting. (Page 3, Lines 19-21) These statistics are simply individual metrics which substantiate that competitors are active in the Phoenix and Tucson markets. Any estimation of market share based on these figures will lead to inaccurate and misleading conclusions.

Q. WHY WILL USING THESE FIGURES RESULT IN AN INACCURATE DETERMINATION OF MARKET SHARE.

A. There are several reasons why one cannot simply compile the data cited and produce an accurate market share measurement. First, the count of access lines lost to competitors is understated, as the data relies on customers self-reporting that they are leaving Qwest for a competitor. Many customers may not freely share this information. Second, the data provided by Qwest does not represent the entire market. Qwest has no way of determining total number of lines served by facilities-based carriers, for example. Third, as I explained in my rebuttal of Mr. Dunkel, telephone numbers ported cannot be considered representative of all lines provided by a competitor. For these reasons, as well as those outlined in the previous answer, the individual components cannot be "summed" to arrive at an accurate market penetration or "share" figure.

1 **Q. DR. COLLINS DISCOUNTS RESALE AND THE PROVISION OF**
2 **UNBUNDLED NETWORK ELEMENTS AS FORMS OF TRUE**
3 **COMPETITION. (PAGE 3, LINES 27-28, - PAGE 4, LINES 1-18) WHAT**
4 **IS YOUR REACTION TO THIS?**
5 A. As I stated in my rebuttal to Mr. Dunkel on the same issue, resale and
6 UNEs are means designated by Congress to open the local exchange
7 market to competition. As such, resold lines and UNEs should be
8 considered when evaluating the competitiveness of a particular market.
9
10 **Q. DR. COLLINS INDICATES HE IS UNCLEAR AS TO WHY QWEST**
11 **DOES NOT USE PROCESSES ALREADY IN PLACE TO ACHIEVE**
12 **PRICING FLEXIBILITY FOR SERVICES SUBJECT TO COMPETITION.**
13 **COULD YOU BRIEFLY SUMMARIZE THE RATIONALE FOR YOUR**
14 **COMPETITIVE ZONE PROPOSAL?**
15 A. Yes. First, the existing process is lengthy and fraught with delays that are
16 untenable in a competitive environment. Second, competitors are not
17 entering markets one service at a time. They are targeting specific
18 geographic areas with a full menu of service options for consumers. The
19 competitive zone proposal I have advanced will enable Qwest to respond
20 to competition in a timely manner and will allow the company the pricing
21 flexibility it needs for all competitive services in an expeditious fashion.
22

1 **Q. DR. COLLINS CLAIMS THAT QWEST'S FACTS CONCERNING**
2 **COMPETITORS' ABILITY TO PICK AND CHOOSE CUSTOMERS IN**
3 **SERVICE AREAS ARE MISSTATED. IS HE CORRECT?**
4 A. No. Cox is an excellent example of a competitor picking and choosing
5 where it will serve. Cox originally rolled out telephone service in Chandler.
6 Once that deployment was complete, the company expanded service to
7 other selected areas of the city, e.g., northeast Phoenix, Scottsdale, etc.
8 Furthermore, contrary to Dr. Collins' understanding of the Phoenix market,
9 some competitors segregate at an even more finite level. For example,
10 One Point focuses primarily on residential apartment complexes while
11 NEXTLINK focuses largely on business complexes. It is apparent that Dr.
12 Collins does not have an accurate view of the manner in which
13 competition is approaching the market in Phoenix and Tucson. This is
14 precisely why Qwest has proposed competitive zone pricing flexibility at
15 the wire center level.
16
17 **Q. DR. COLLINS COMPLAINS AT PAGE 9 THAT YOU HAVE**
18 **APPARENTLY CONFUSED THE TERMS "WIRE CENTER" AND**
19 **"EXCHANGE" IN YOUR EXECUTIVE SUMMARY PRECEDING YOUR**
20 **DIRECT TESTIMONY IN THIS DOCKET. DO YOU CARE TO**
21 **COMMENT?**

1 A. Yes. I clearly understand the distinction between a wire center and an
2 exchange. An exchange in a large metropolitan area, such as Phoenix,
3 can be made up of several wire centers. In the more rural areas of the
4 state, the wire center and exchange boundaries can be one and the
5 same. It is not clear why Dr. Collins felt compelled to challenge my
6 knowledge of telephony definitions, but he should rest assured that I
7 comprehend the wire center/exchange distinctions.
8
9 **Q. DR. COLLINS MAINTAINS THAT NEW MARKET ENTRANTS ARE NOT**
10 **ENGAGED IN "CREAM SKIMMING." DO YOU AGREE?**
11 A. No, I do not. While there are competitive alternatives for residential
12 customers in Phoenix, and Cox is certainly a primary residential
13 competitor, the number of companies vying for Qwest's business
14 customers is far greater. There are currently no known competitors for
15 residence customers in the Tucson area.[6] There is no doubt that most
16 competitors are after the high margin business customer as a means of
17 quickly recouping investment and maximizing profit margins.
18
19 **Q. DR. COLLINS TAKES ISSUE WITH THE PRICE FLOOR AND PRICE**
20 **CEILING PROPOSED FOR COMPETITIVE ZONES. PLEASE**
21 **COMMENT.**

A. Dr. Collins' has painted an unrealistic mischaracterization of Qwest's proposed pricing constraints within competitive zones. As I stated previously in my rebuttal of Mr. Dunkel's testimony, the proposed price ceiling was established as a reasonable limit on any future price increases. In terms of the price floor, Dr. Collins purports to define for the Commission – absent any basis in fact – how Qwest would utilize and administer its proposal to allow some services to be priced below TSLRIC as long as the revenue for the customer or group of customers was above TSLRIC. Dr. Collins uses extreme examples, none of which are realistically within the realm of possibility. Qwest will not price residential local exchange service at zero, as Dr. Collins suggests on Page 10 of his testimony. In fact, as Qwest stated in its response to a data request from Mr. Dunkel which was also furnished to Cox, residence basic exchange service would not be considered part of the price floor test because the service is already priced below cost.[7] Furthermore, under the competitive zone proposal, Qwest is not going to design a pricing scheme that will classify customers or groups of customers at the sub-wire center level. This would be virtually impossible to implement, much less track, and would place an extensive administrative burden on all involved. Qwest is interested in streamlining processes, rather than making them more

[6] However, Qwest has obtained competitive intelligence regarding Cox's plans to deploy telephone service in Tucson in 2001.
[7] Qwest response to WDA 04-007 in this proceeding.

complex. Dr. Collins' portrayals of what "could" happen under competitive zone pricing should be dismissed as alarmist and unrealistic.

Q. ON PAGE 13 OF HIS TESTIMONY, DR. COLLINS INDICATES YOU "INCLUDED STORIES ABOUT QWEST'S ACTIVITIES IN OREGON" IN YOUR SUPPLEMENTAL DIRECT TESTIMONY. IS THIS CORRECT?

A. No, I made no mention of Oregon in my Supplemental Direct testimony. I did, however, respond to a data request from Mr. Dunkel with information relative to the Oregon Commission's treatment of competitive zones.

Q. WOULD YOU PLEASE SUMMARIZE THE ACTIONS THE OREGON COMMISSION HAS TAKEN IN RECOGNITION OF COMPETITION IN THAT STATE?

A. Yes. Oregon allows the establishment of competitive zones upon a showing by Qwest that competitive local exchange carriers (CLECs) have certificates of authority to provide service in Qwest exchanges, Qwest has an approved interim local number portability tariff in effect, and there has been a mutual exchange of traffic between Qwest and a CLEC in the specific exchanges. Exhibit DLT-2 contains a copy of a March 28, 2000 memo from the Oregon Public Utility Commission Telecommunications Division notifying the Oregon Commission that the criteria for granting Qwest pricing flexibility in forty-nine additional exchanges in the state had

been met pursuant to ORS 759.050(5) and Order No. 96-021, dockets CP 1, CP 14 and CP 15.[8] "By this report staff notifies the Commission that a mutual exchange of traffic exists between USWC and an authorized CLEC in the above forty-nine exchanges. Therefore, USWC now gets pricing flexibility for switched service in those exchanges. No Commission action is required."[9] Fifty-seven Qwest exchanges in Oregon have thus been deemed competitive zones, leaving only seven exchanges in the state where Qwest does not have pricing flexibility.

Q. DR. COLLINS RECOMMENDS THIS COMMISSION DISREGARD INFORMATION ABOUT COMPETITIVE ZONE ACTIVITY IN OTHER STATES. IN YOUR OPINION, IS THIS WISE COUNSEL?

A. No. If the Commission is to fulfill its commitment to Arizona rate payers, it cannot operate in a vacuum. Arizona is experiencing significant local exchange competition. If other state commissions have taken steps to advance the benefits of competition to their constituents, it may be prudent for this Commission to apply what has worked elsewhere to the regulatory structure in Arizona. To do otherwise would be a disservice to Arizona consumers.

[8] Qwest had previously received approval to have eight exchanges classified as competitive zones. Copies of Oregon Public Utility Commission Orders and Rules pertaining to competitive zones was provided in response to Mr. Dunkel's twenty-fourth set of data requests in this proceeding, WDA-24-6.

Q. HAVE OTHER STATE COMMISSIONS OR LEGISLATORS ALSO TAKEN STEPS TO ESTABLISH COMPETITIVE ZONES?

A. The criteria for granting incumbent local exchange carriers (ILECs) pricing flexibility and reduced regulatory oversight on a geographical basis due to the existence of competition varies. Some states I am aware of have very specific criteria, others do not.

For example, Utah Code 54-8b-2.3 allows ILECs to petition the Utah Commission for pricing flexibility in defined geographic areas when the following conditions have been met:

- The Commission has issued a certificate to the competing telecommunications corporation;
- The competing telecommunications corporation has begun providing the authorized public telecommunications service in the defined geographic area;
- The incumbent telephone corporation, by written agreement, stipulation, or pursuant to an order of the Commission, has allowed the competing telecommunications corporation to interconnect with the essential facilities and to purchase essential services of the incumbent telephone corporation; and
- The incumbent telephone corporation is in compliance with the rules and orders of the Commission adopted or issued under Section 54-8b-2.2.

The Utah Commission approved Qwest's request for pricing flexibility in ten wire centers on August 1, 2000.

[9] Interoffice Correspondence, Public Utility Commission Telecommunications Division, March 28, 2000, Page 2.

In 1998, the South Dakota legislature passed into law House Bill 1160 which allows any telecommunications company to "grant discounts, incentives, services, or other business practices necessary to meet competition."[10]

Qwest currently has pricing flexibility similar to what it is seeking in this docket in Nebraska and Iowa and has filed for competitive classification of business services in specific geographic areas in Washington.

As these examples illustrate, state commissions and lawmakers have established various means of ensuring that the benefits of competition flow to consumers by granting Qwest the flexibility it needs to respond to direct competition.

Q. ON PAGE 14 OF HIS TESTIMONY, DR. COLLINS OPINES THAT QWEST'S COMPETITIVE ZONE PROPOSAL SHOULD BE DENIED BECAUSE "QWEST DOES NOT NEED ANOTHER ANTICOMPETITIVE TOOL." HE WAS REFERRING TO QWEST'S COMPETITIVE RESPONSE TARIFF. DOESN'T COX HAVE A SIMILAR TARIFF IN PLACE?

[10] § 49-31-44, Section 28.

A. Yes. Exhibit DLT-3 is a tariff, which became effective on December 9, 1999, Cox has on file with the Arizona Corporation Commission outlining the marketing program Cox currently offers customers to "win" them back or to retain existing customers who receive a solicitation from a Cox competitor. In fact, Cox's offering is called the "Competitive Response Program," and is available to residential and business customers. This is another example of where a competitive advantage enjoyed by Qwest's competitors is viewed as "anticompetitive" when it's employed by Qwest – in the eyes of Qwest's competitors.

This Commission should not be fooled by competitors who contend, as Dr. Collins does in his testimony, that competition is in the "embryonic" stage (Page 15) of development and any attempt by Qwest to gain competitive parity will stifle competition. Just the opposite is true – competition is thriving, consumers in Phoenix and Tucson have choices in telephone providers, and consequently, reduced regulation of Qwest's services in those areas targeted by competitors is an appropriate Commission response.

IV. RESPONSE TO DR. LEE SELWYN

Competitive Zones

Q. ON PAGES 8-10 OF HIS TESTIMONY, MR. SELWYN MAINTAINS THAT QWEST IS NOT EXPERIENCING SUFFICIENT COMPETITION TO JUSTIFY ITS REQUEST FOR PRICING FLEXIBILITY WITHIN COMPETITIVE ZONES. PLEASE COMMENT.

A. Mr. Selwyn relies a great deal on data published by the FCC in its most recent "Trends in Telephone Service" report. This report cannot be construed to reflect the entire scope of the competitive telecommunications market in Arizona, nor does it provide information specific to Phoenix and Tucson, the areas I have recommended be classified as competitive zones. The report provides certain statistics, such as the percent of ILEC lines being resold, that provide an indication of the competitive nature of a market, however, it does not provide state-specific or wire center specific information relative to facilities-based competition. In addition, the information in the March 2000 report reflects data that is over a year old. As is evidenced by this very proceeding, competition is advancing at such a rapid pace in the state that year-old data is obsolete and should not be used as the basis for decision-making by the Commission.[11]

[11] For example, I filed Direct testimony on January 8, 1999 in this docket, proposing three wire centers be classified as residential competitive zones in the Phoenix metro area, based on the existence of Cox facilities in those wire centers. By the time I filed Supplemental Direct testimony in this docket sixteen

I have submitted voluminous information in this proceeding through my Direct testimony and exhibits, Supplemental Direct testimony and exhibits, and in Qwest responses to data requests which illustrate, to a much greater degree than the FCC report referenced by Mr. Selwyn, the extent of competition in the Phoenix and Tucson markets. In addition, the CLECs file annual reports with this Commission that provide much more specific and relevant data than that included in the FCC report. That is the data that should be considered by this Commission when evaluating whether competition is present to the extent that pricing flexibility in specific geographic areas is warranted, as I have proposed.

Q. ON PAGE 10, LINES 13-14, MR. SELWYN STATES THAT COLLOCATION "PROVES VERY LITTLE ABOUT THE EXTENT OF LOCAL COMPETITION." DO YOU AGREE?

A. No, I believe collocation is another indicator of the inroads competition is making in local markets. Indeed, the FCC report that Mr. Selwyn references includes collocation as a measurement of competition. Although Mr. Selwyn neglects to provide Arizona-specific statistics on this particular measurement from the FCC report, it indicates that as of June 30, 1999, 52.8% of ILEC residential lines and 74.7% of other ILEC lines in the state are served by central office switches where competitors have

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months later on May 19, 2000, I proposed that an additional eighteen wire centers be classified as residence

collocated. Again, this data is over a year old so the percentages are obviously understated. Also, the data is not wire center specific so it does not reflect the situation in the Phoenix and Tucson wire centers I have proposed become competitive zones.

Q. ON PAGE 12, LINES 11-13 OF HIS TESTIMONY, MR. SELWYN ALLEGES QWEST IS ATTEMPTING TO CIRCUMVENT EXISTING COMMISSION RULES REGARDING COMPETITIVE CLASSIFICATION. IS THIS TRUE?

A. No. As I've explained in my rebuttal of Mr. .Dunkel, Qwest's competitive zone proposal fully complies with Commission rules.

Q. MR. SELWYN MAINTAINS THAT REGULATORY PARITY IS NOT APPROPRIATE FOR QWEST BECAUSE THE COMPANY MAINTAINS MARKET POWER. DO YOU AGREE?

A. I would agree that Qwest retains market power in outstate Arizona, but certainly not in the Phoenix and Tucson areas where competitors have committed significant investment and are aggressively targeting and winning Qwest residential and business customers. Dr. Taylor addresses market power more fully in his testimony.

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competitive zones, based on Cox's expansion of its fiber facilities.

1 **Q. MR. SELWYN MAINTAINS THAT QWEST'S COMPETITIVE ZONE**
2 **PROPOSAL WILL HARM CUSTOMERS WITHOUT COMPETITIVE**
3 **ALTERNATIVES. (PAGE 13, LINE 7) DO YOU AGREE?**
4 A. No. In actuality, Qwest's customers in those areas without alternatives
5 will be harmed if the Commission does not allow Qwest to compete more
6 effectively. When it loses high revenue customers, Qwest must recover
7 its costs over a smaller customer base. As the rate of loss grows, and
8 support from high margin services is no longer available (as those are the
9 services initially targeted by most competitors), rate increases become
10 inevitable. If this Commission will allow Qwest to compete on equal
11 footing with its competitors, it will have the opportunity to retain some
12 proportion of those high revenue customers and avoid future rate
13 increases for those customers in areas competitors have chosen not to
14 serve.
15
16 **Q. MR. SELWYN ALSO DISCOUNTS RESALE AND UNE'S AS VIABLE**
17 **FORMS OF COMPETITION, AS DID DR. COLLINS. (PAGE 17). DO**
18 **YOU HAVE ANYTHING TO ADD TO WHAT YOU'VE ALREADY**
19 **PROVIDED IN RESPONSE TO THIS POSITION?**
20 A. Yes. The FCC report relied upon so heavily by Mr. Selwyn, reinforces
21 Congress' view of these alternatives:
22 The Telecommunications Act of 1996 contemplated three
23 *incrementally powerful vehicles* for entering local telephone

> service markets. First, CLECs may resell the services of ILECs. Second, CLECs may make use of ILEC facilities, for example, by leasing ILEC UNE loops to use in combination with the CLEC's own switching ability. Third, CLECs may build the complete set of facilities they need to compete. Individual competitors have used various combinations of these methods at different times.[12] (emphasis added)

As Congress envisioned, and the FCC reports, CLECs are using resale, UNEs and their own facilities as means to compete. The data submitted by Qwest in this proceeding demonstrates that CLECs are competing on all three levels in the Phoenix and Tucson areas.

Q. MR. SELWYN CONTENDS THAT IF A COMPETITOR WAS OFFERING A SERVICE TO A SINGLE CUSTOMER IN A WIRE CENTER, THAT COULD TRIGGER ESTABLISHMENT OF A COMPETITIVE ZONE. IS THIS ACCURATE?

A. No. For expansion of competitive zones in the future, Qwest would be required to notify the Commission that competition exists in the form of at least one of the three criteria specified in my Direct testimony in a particular wire center. This notification would certainly have to pass the "red face" test. It would be based on much stronger evidence than a competitor serving one customer in a wire center. That is not even reasonable.

[12] *Trends in Telephone Service*, March 2000, Industry Analysis Division, Common Carrier Bureau, Federal Communications Commission, Page 9-1.

1

2 **Q. ON PAGES 17-20, MR. SELWYN INDICATES THERE IS A RISK OF**
3 **CROSS-SUBSIDIZATION IF COMPETITIVE ZONES ARE APPROVED.**
4 **IS THIS A LEGITIMATE CONCERN?**

5 A. No. There are rules in place that prohibit cross subsidization between
6 regulated and deregulated products.[13] I am not proposing that the
7 services included in competitive zones be deregulated. They will remain
8 regulated but be afforded increased pricing flexibility. Hence, Qwest will
9 continue to adhere to existing rules prohibiting cross-subsidization if
10 competitive zones are granted.

11

12 **Q. AT PAGE 18, MR. SELWYN COMPLAINS THAT, IN RESPONSE TO**
13 **DATA REQUEST WDA 04-008, QWEST STATES THAT CERTAIN**
14 **SERVICES IN COMPETITIVE ZONES COULD BE PRICED BELOW**
15 **TSLRIC, IN VIOLATION OF PROVISIONS OF TA 1996 AND**
16 **COMMISSION RULES. WOULD YOU COMMENT?**

17 A. Yes. Qwest will violate no provisions of TA 1996 or any Commission rules
18 in its pricing of services within competitive zones. In its response to WDA
19 04-008, contrary to Mr. Selwyn's allegations, Qwest did not imply that it
20 would price services at levels that will fail an imputation test, nor did it
21 suggest that it would subsidize competitive services with revenues from

[13] R 14-2-1109 c prohibits cross subsidization.

non-competitive services. In responding to competition in a wire center that has been classified as a competitive zone, Qwest will be prepared to demonstrate that, even if a price of a non-competitive service in a bundle of services is offered at a level below TSLRIC to respond to a particular competitor's offering, the revenues for that bundle of service will pass an imputation test, and by definition, exceed the combined TSLRIC cost for that bundle of services.

Q. MR. SELWYN MAINTAINS ON PAGE 23, LINES 3-5, THAT QWEST SHOULD NOT BE ALLOWED TO RECLASSIFY A WIRE CENTER AS A COMPETITIVE ZONE UPON 15 DAYS NOTICE AND WITHOUT EXPLICIT COMMISSION ACTION AS PROPOSED. WHAT IS YOUR REACTION TO THIS?

A. Qwest's proposal to expand competitive zone designation to additional wire centers based on the existence of competitive presence is intended to streamline regulatory processes and facilitate bringing the benefits of competition to consumers in a much more rapid fashion than has previously been the case. Other state commissions have recognized that, upon receiving documentation of the existence of competition, a lengthy regulatory proceeding is not necessary or appropriate.[14]

Q. MR. SELWYN OPPOSES YOUR PROPOSAL FOR TREATMENT OF NEW SERVICES BECAUSE NEW SERVICES ARE NOT LIKELY TO BE DISCRETIONARY IN NATURE AS QWEST HAS CONTENDED, NOR, ACCORDING TO MR. SELWYN ARE NEW SERVICES LIKELY TO FACE COMPETITION. (PAGE 25) PLEASE COMMENT.

A. In my Direct testimony, I proposed that new services be automatically classified as competitive. I do not agree that most new services are not discretionary. Mr. Selwyn proposes a subjective test of how to determine that a service is discretionary, based upon how an end user may view the service or how the service may be priced. In R14-2-1307 (C), the Commission identified essential facilities or services as:

1. Termination of local calls
2. Termination of long distance calls
3. Interconnection with E911 and 911 services
4. Access to numbering resources
5. Dedicated channel network access connections, and
6. Unbundled loops.

New services that do not fall within these categories should be considered competitive.

Mr. Selwyn's comment about new services not necessarily facing competition appears to be a red herring. He makes that statement on Page 25, lines 18-20, then launches into a discussion of how Qwest and

[14] See previous rebuttal to Dr. Collins relative to procedures used by the Oregon Public Utilities

1 its predecessors have been regulated entities who have had their
2 networks subsidized by rate payers. I have two comments on these
3 arguments: One, Qwest's competitors employ the same switch
4 technology utilized by Qwest, consequently, they have the same ability to
5 offer new features and functionality that Qwest does. They may
6 differentiate products by unique branding but that is representative of the
7 choice a competitive market brings consumers. Two, my proposal for the
8 regulatory treatment of new services is based on today's
9 telecommunications environment. Today's consumers are demanding
10 choices, innovation, and instant availability. It is incumbent upon this
11 Commission to make the transition from the traditional regulatory
12 framework to a more streamlined process as competition dictates.
13 Classification of new services as immediately competitive, with the
14 resultant pricing flexibility, is one area where the Commission can be
15 responsive to Arizona consumers with minimal effort and maximum
16 impact. Furthermore, Mr. Selwyn's contentions that services and features
17 that have no independent existence and rely on a common infrastructure
18 should take the regulatory status of the core service flies in the face of
19 how this Commission has treated competitive services in the past. Mr.
20 Selwyn's comments should be dismissed as not being relevant to the
21 Arizona marketplace.

Commission.

1

2 **Q. AT PAGE 47, DR. SELWYN SUGGESTS THAT "...THE COMMISSION**
3 **SHOULD NOT BE CONCERNED THAT IT IS SOMEHOW PUTTING**
4 **U S WEST AT A COMPETITIVE DISADVANTAGE." WOULD YOU**
5 **COMMENT ON THIS PERSPECTIVE?**

6 A. Yes. Qwest must currently price its services in Arizona at statewide
7 average levels. It is unable to offer attractive prices, packages or bundles
8 to respond to competitive entrants, who typically target geographic areas
9 of the state with dense concentrations of customers who are relatively
10 inexpensive to serve. In this scenario, Qwest cannot compete on par with
11 either established or new competitors. Qwest does not seek in this docket
12 to establish a competitive advantage relative to its competitors. Rather, it
13 seeks the ability to respond appropriately and fairly to competition. This
14 is a characteristic of a free market, one in which all competitors creatively
15 and aggressively compete for the customer's business. In a free market,
16 it is the customer who ultimately receives the benefit of full competition.

17

18 **Rate Design**

19

20 **Q. DR. SELWYN, AT PAGE 29, COMPLAINS THAT QWEST'S**
21 **DIRECTORY ASSISTANCE PRICING PROPOSAL "...SHOULD BE**

CONSIDERED AS AN ADDITIONAL INCREASE IN RATES FOR BASIC RESIDENTIAL SERVICE..." IS THIS POSITION WELL FOUNDED?

A. No. Dr. Selwyn's position presumes that all residential customers typically utilize Directory Assistance (D.A.) service, that it is essentially a component of residential local exchange service and that there are no competitive alternatives for the service. These presumptions are all seriously incorrect. In fact, the majority of residential customers do not utilize D.A. service each month, the service is completely discretionary and a wide range of competitive alternatives to Qwest's D.A. service are available to each and every Arizona consumer.

Additionally, Qwest's primary D.A. competitors, AT&T and WorldCom, make no distinction between local and national D.A. service, and price their services significantly higher than the $0.85 level proposed by Qwest in this docket. These providers support the premium rate levels at which the service is offered by bundling in value-added attributes, such as call completion, reverse directory search and proximity searches (e.g., provide the telephone numbers of all Italian restaurants within five miles of Camelback Mountain). Customers clearly find value in these added D.A. features, as reflected in the continued decline in Qwest D.A. call volumes. The D.A. competitive paradigm has changed: this service is no longer viewed as the "model T" listing service, but has evolved to a service

utilizing advanced technology to provide value and convenience. As outlined in my direct testimony, Qwest will integrate the call completion feature with its D.A. service to add value commensurate with the $0.85 proposed price, and will continue to add features to differentiate this service in the competitive D.A. market.

V. RESPONSE TO DR. BEN JOHNSON

Competitive Zones

Q. THROUGHOUT THE DISCUSSION OF QWEST'S COMPETITIVE ZONE PROPOSAL IN HIS TESTIMONY, DR. JOHNSON RELIES ON MARKET SHARE AS THE PRIMARY INDICATOR OF AN EFFECTIVELY COMPETITIVE MARKET. PLEASE COMMENT.

A. Dr. William Taylor provides extensive testimony regarding the manner in which market share should be viewed by the Commission in considering Qwest's competitive zones proposal. However, as I indicated in my rebuttal to Dr. Collins' testimony, market share is only one indicator the Commission should use in determining whether a market is subject to effective competition. I have provided previous testimony documenting the number of alternative providers offering services in the Phoenix and Tucson markets, including a description of the services offered by

1 competitors. In my testimony and in Qwest responses to data requests in
2 this proceeding, I've provided samples of competitors' marketing efforts,
3 including advertisements, door hangers, and direct mail correspondence.
4 I've provided in-depth information on technologies employed by
5 competitive providers to reach consumers in the wire centers I am
6 proposing be classified as competitive zones, to the extent that Qwest, as
7 a competitive entity, can identify and quantify such intelligence. However,
8 Dr. Johnson is correct when he states on Page 20, Line 29 – Page 21,
9 Lines 1-2 that Qwest has not provided market share information in this
10 docket.
11
12 **Q. WHY IS IT THAT QWEST HAS NOT PROVIDED MARKET SHARE**
13 **DATA IN SUPPORT OF ITS COMPETITIVE ZONE PROPOSAL?**
14 A. The answer is quite simple – Qwest does not have the data necessary to
15 quantify its market share, or the market share of any of its competitors –
16 because it does not have access to its competitors statistics that would
17 enable it to analyze the entire market. Highly sensitive competitive
18 intelligence, such as number of access lines served, location of fiber
19 facilities, number of customers served, competitive prices, etc. needed to

1 produce a true market share calculation, is not freely shared by Qwest's
2 competitors. Nor is it publicly available.[15]
3
4 **Q. DR. JOHNSON HAS COMPUTED QWEST MARKET SHARE FIGURES**
5 **BASED ON DATA FILED IN THIS PROCEEDING. ARE YOU SAYING**
6 **THOSE ARE NOT RELIABLE STATISTICS?**
7 A. Yes. I will examine in more detail Dr. Johnson's conclusions in the
8 testimony that follows, but one cannot determine market share information
9 by looking solely at one segment of the market (i.e., input from Qwest),
10 which is what Dr. Johnson has done. He has not accessed information
11 from each CLEC offering telecommunications services in the Phoenix and
12 Tucson areas which is necessary for an accurate assessment of the total
13 market. .
14
15 **Q. ON PAGES 22 AND 23 OF HIS TESTIMONY, DR. JOHNSON**
16 **"SUMMARIZES" YOUR SUPPLEMENTAL DIRECT TESTIMONY. HAS**
17 **HE ACCURATELY CAPTURED THE BREADTH OF THE DATA IN THE**
18 **TESTIMONY?**
19 A. No. Dr. Johnson's summary failed to include the data I provided on the
20 transition of Qwest's competitors to "full service providers" through which
21 they are providing a broad range of services directly substitutable to the

[15] The information may be provided in the annual reports filed by CLECs with this Commission, however,

1 services offered by Qwest. He also failed to reflect the updated
2 documentation which appeared in my Direct testimony illustrating the
3 expansion of competitive fiber facilities and switches in the Phoenix and
4 Tucson areas. Another key point missed by Dr. Johnson was the extent
5 competitors are partnering with other providers to allow them to reach
6 more customers with a wider variety of services. My Supplemental Direct
7 testimony included a comprehensive update of competitors' activities
8 which impact the Phoenix and Tucson markets.
9
10 **Q. DR. JOHNSON REACHED THE CONCLUSION THAT SERVICES**
11 **BEING PROVIDED BY COMPETITORS IN PHOENIX BUILDINGS ARE**
12 **HIGH CAPACITY SERVICES. IS THIS CORRECT?**
13 A. No. A review of my Direct and Supplemental Direct testimony and
14 exhibits, as well as Qwest responses to RUCO data requests will show
15 that competitors are offering a full menu of services in competition to
16 Qwest services. For example, Exhibit DLT-4 to my Direct testimony
17 demonstrates that AT&T is offering a number of switched services directly
18 substitutable for Qwest's business access line services, trunks, Centrex,
19 ISDN, and toll services. Exhibit DLT-5 to my Direct testimony is an ELI
20 advertisement which states that ELI offers business customers
21 voice/data/video solutions – with number portability. Exhibit DLT-8 to my

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such data is filed under protective seal and is not publicly available.

Direct testimony is a copy of correspondence Cox sent to a potential customer in the Phoenix area. It indicates residential customers can purchase primary and additional telephone lines, as well as features such as Caller ID, Voice Mail, and Call Waiting from Cox rather than Qwest.

My Supplemental testimony also included many examples of services competitors are offering beyond high capacity services. Exhibit DLT-1 includes a page from AT&T's Internet web site which describes why "AT&T local service is the best choice for businesses." Exhibit DLT-2 includes a description of WorldCom's "On-Net Service" which provides business customers the ability to "utilize a single access method for all voice, data, and Internet services..." Exhibit DLT-4 contains a listing of services available from ELI including Basic Business Lines, Business Trunks, Centrex, Foreign Exchange Services, ISDN, Voice Messaging, Custom Calling Services, etc.

The competitors Qwest is facing in the Phoenix and Tucson markets are offering much more than high capacity services, as Dr. Johnson has incorrectly concluded. They are aggressively competing for Qwest's core services – residential as well as business.

1 **Q. DR. JOHNSON DISAGREES WITH THE CRITERIA QWEST HAS**
2 **PROPOSED BE USED IN DETERMINING COMPETITIVE ZONE**
3 **CLASSIFICATION. HE INDICATES THAT UNDER THE PROPOSED**
4 **STANDARDS, A COMPETITOR COULD BE OFFERING ONE SERVICE**
5 **TO ONE CUSTOMER – OR ADVERTISING THAT THE SERVICE IS**
6 **AVAILABLE, AND THAT WOULD TRIGGER COMPETITIVE ZONE**
7 **CLASSIFICATION. PLEASE RESPOND.**
8 A. Under Qwest's proposal, the Commission will be notified that competition
9 in the form of the presence of a reseller, a facilities-based provider, or a
10 provider utilizing UNEs exists in a particular wire center. (The wire centers
11 I proposed be classified as competitive zones in my Direct and
12 Supplemental Direct testimony were based on the existence of facilities-
13 based providers.) Nowhere in Qwest's proposal does it indicate that the
14 offering of service to a single customer will trigger competitive zone status.
15 Qwest will have the burden of demonstrating to the Commission that
16 competition exists based on one of the above three criteria. The
17 Commission will have the opportunity to object to Qwest's proposal and
18 initiate a formal investigation. The process Qwest has proposed for
19 establishment of future competitive zones was designed with the intent to
20 streamline the process, similar to that currently employed by the Oregon
21 Public Utilities Commission (described in my rebuttal to Dr. Collins'
22 testimony). The Company is seeking a means of being able to effectively

respond to competition without subjecting the Arizona Commission and ratepayers to a lengthy regulatory proceeding. A one to two year proceeding to determine if a particular geographic area is subject to competition is the antithesis of a competitive environment. A more rapid means of bringing the benefits of competition to Arizona consumers is warranted. The proposal outlined in my Direct testimony will accomplish that.

Q. DR. JOHNSON OBJECTS TO THERE NOT BEING ANY DISTINCTION IN DETERMINING WHETHER A PARTICULAR AREA IS COMPETITIVE BASED ON WHETHER THE COMPETITOR IS A RESELLER. IN YOUR OPINION, IS SUCH A DISTINCTION APPROPRIATE?

A. No. The end user who is approached by an alternative provider makes no such distinction, the market makes no such distinction, therefore, the regulatory process governing the market should make no such distinction. As I've stated previously in this testimony, the FCC and Congress have identified resale as a viable, meaningful form of local competition. The Arizona Commission should also.

Q. IN HIS DISCUSSION OF COMPETITIVE ZONES (PAGE 25, LINES 14-15), DR. JOHNSON REFERS TO THE DEREGULATION OF SERVICES

WHICH WILL RESULT WITH COMPETITIVE ZONE CLASSIFICATION. IS THIS CHARACTERIZATION ACCURATE?

A. No. Services offered within a competitive zone will continue to be regulated by the Commission.

Q. DR. JOHNSON REFERENCES A QWEST RESPONSE TO RUCO DATA REQUEST 30-001 WHICH PROVIDED A STATE-WIDE RESIDENTIAL "MARKET SHARE" STATISTIC. (PAGE 27, LINES 12-14) CAN THIS BE CONSIDERED AN ACCURATE ASSESSMENT OF MARKET SHARE?

A. No. Dr. Johnson neglected to include the entire response. Qwest also stated in its response to this data request:

> This estimate is based on public information available to U S WEST; however, the figure is likely <u>overstated</u> since the company does not have access to competitors' actual share or customer counts. (emphasis added)

As I indicated earlier, without having facts and data on the complete universe, an accurate assessment of market share cannot be determined.

Q. ON PAGE 28, LINES 3-4, OF HIS TESTIMONY, DR. JOHNSON STATED THAT THE COMPETITIVE INFORMATION PROVIDED BY QWEST IN THIS DOCKET "ISN'T SUFFICIENT TO CONCLUDE THAT

COMPETITIVE PRESSURES ARE SIGNIFICANTLY GREATER IN THESE WIRE CENTERS THAN IN OTHER PARTS OF THE STATE," REFERRING TO THOSE WIRE CENTERS QWEST IS PROPOSING BECOME COMPETITIVE ZONES. IS THIS AN ACCURATE CONCLUSION?

A. No, it is not. Qwest's confidential response to data request WDA 02-39 (Attachment B) lists the total quantity of each USOC for each class of service in each exchange in the state for each CLEC resold during the month of April 1999. This data shows that resale, just one indicator of a competitive market, is extremely more prevalent in Phoenix and Tucson exchanges than it is in the rest of the state. For example, there were XX residence access lines resold in Bisbee, contrasted to XX residence access lines resold out of the Chandler Main wire center during this time period. (See Proprietary Exhibit DLT-4 for figures.) The difference is even more pronounced for business. A review of Attachment B will substantiate that Qwest is experiencing a much greater degree of competition in Phoenix and Tucson than it is in outlying areas of the state. Dr. Johnson's conclusion is incorrect.

Q. ON PAGE 29, LINES 12-13, DR. JOHNSON INDICATES THAT "THE TREND TOWARDS INCREASED COMPETITION IS STILL IN ITS INFANCY." DO YOU AGREE WITH HIS ASSESSMENT?

A. No. Dr. Johnson is basing this statement on a partial review of a subsegment of the total market. His analysis focused solely on the residential market and he did not obtain data from competitive carriers directly. Qwest is certainly experiencing competition in the residential market, primarily from Cox and a limited number of providers focusing on apartment complexes; however, the competition it is facing for business customers is much more extreme. Furthermore, Qwest does not purport to have data that represents the entire competitive telecommunications market in the Phoenix and Tucson areas. Some information is only available from the competitors themselves. Dr. Johnson's sweeping statement that competition is in its infancy must be rejected as based on incomplete evidence.

Q. DR. JOHNSON ATTEMPTS TO FURTHER SUPPORT HIS CLAIM THAT THE EXTENT OF COMPETITION IN THE PHOENIX AND TUCSON MARKETS IS NOT DEVELOPED SUFFICIENTLY TO WARRANT APPROVAL OF QWEST'S COMPETITIVE ZONE PROPOSAL ON PAGES 30-31. PLEASE COMMENT ON HIS OBSERVATIONS.

A. On Page 30, Lines 22-24, Dr. Johnson states that "until customers actually change carriers, *and are satisfied with the service provided by new entrants*," the market cannot be considered effectively competitive. (emphasis added) Qwest has provided a significant amount of data in this

1 proceeding that demonstrates customers are changing carriers, at an
2 increasing rate. However, I know of no economic or regulatory mandate
3 that makes customer satisfaction a requirement for effective competition.
4 If a market is competitive, and customers are not satisfied, they have
5 alternatives. Customer satisfaction is not a prerequisite to an effectively
6 competitive market – it is an end result. Furthermore, he has provided no
7 facts or data to illustrate whether customers are satisfied. He infers that
8 they are not, but provides no support for his position. These ambiguous
9 contentions should be dismissed as irrelevant to the issues addressed in
10 this proceeding.
11
12 On Page 31, lines 3-4, Dr. Johnson states "very few customers
13 have ever seriously contemplated changing their local carrier." He
14 provides no information to illuminate how he arrived at such a
15 conclusion. Consequently, the statement can be lent no credence,
16 and it, too, should be dismissed.
17
18 He also concludes that Qwest's request for competitive zone pricing
19 flexibility should be denied because the total number of competitive local
20 exchange carriers operating in Arizona is much lower than the number of
21 competitive long distance carriers. (Page 31, Lines 5-6) Long distance
22 competition has been prevalent for decades – local competition was

initiated four years ago. The number of long distance carriers has absolutely no impact on the competitiveness of the local market and Dr. Johnson's attempt to derail the Commission's attention from the true issues of this proceeding should be dismissed without merit.

Q. ON PAGE 33 OF HIS TESTIMONY, LINES 1-4, DR. JOHNSON MAKES A STATEMENT INDICATING THAT IF CHOICES WERE TRULY PREVALENT IN THE PHOENIX MARKET, HIS MARKET SHARE CALCULATION SUPPOSEDLY REPRESENTING QWEST'S MARKET SHARE WOULD BE LOWER. DO YOU AGREE?

A. No. As I indicated above, Dr. Johnson's market share calculation is flawed and based on incomplete data. Furthermore, it is not appropriate to use a residence figure to represent the degree of competition in the entire market. Business competitors have been much more aggressive in pursuing Qwest customers for a longer period of time. I do not agree with Dr. Johnson's assessment of the competitive alternatives which exist in the Phoenix market. The documentation I've provided in testimony and through Qwest responses to data requests demonstrates otherwise.

Q. DR. JOHNSON TAKES ISSUE WITH THE PROPOSED PRICE CEILINGS FOR SERVICES WITHIN COMPETITIVE ZONES. ARE PRICE CEILINGS UNIQUE TO QWEST?

1 A. No. Qwest's competitors have identified maximum rates for their services,
2 some of which are much higher than existing rates. The effect of this is
3 that competitors are able to increase rates up to the filed price ceiling
4 without seeking and obtaining Commission approval. Qwest is asking for
5 that same latitude – in those areas where it is experiencing competitive
6 pressure.
7
8 **Q. WILL QWEST LOWER ITS RESIDENTIAL ACCESS LINE RATE TO**
9 **MEET OR BEAT THE PRICE OF COX'S RESIDENCE SECOND LINE,**
10 **AS DR. JOHNSON ON PAGE 39, LINES 8-14?**
11 A. No. Qwest's residential access lines are already priced below cost.
12 Qwest will not lower them in response to competitive pressure.
13
14 **Q. DR. JOHNSON ALSO SURMISES THAT QWEST COULD RAISE**
15 **PRICES FOR SOME CUSTOMERS AND LOWER PRICES FOR**
16 **OTHERS. IS THIS PART OF THE FLEXIBILITY YOU ENVISION FOR**
17 **COMPETITIVE ZONES?**
18 A. Yes. However, I must clarify this response because it can easily be
19 misconstrued, as is evidenced by the testimony that has been filed by
20 Qwest's competitors in this case. Within a competitive zone, i.e., wire
21 center, Qwest will have the ability to respond to market demands by
22 adjusting rates below the specified price ceiling. Rates for like customers

within a competitive zone may be increased in response to competition – to the maximum rate – or they may be decreased in response to competition. Rates for customers in other competitive zones may be unaffected, unless Qwest is experiencing the same type of competition which would generate the same competitive response. However, rates for customers who do not reside within a competitive zone will be unaffected by any such price changes. In other words, those customers without competitive alternatives will not be affected by rate changes made in response to competition and those customers within a competitive zone who are impacted will obviously have choices if they do not agree with Qwest's new rates. Rates for customers outside of competitive zones cannot be increased outside of a rate case; therefore the Commission will continue to have the final say in the rates that are charged to customers with no competitive alternatives. Qwest simply desires to compete on a level playing field with its competitors in those geographic locations where competition is prevalent.

Q. DR. JOHNSON ALLEGES THAT QWEST WILL USE COMPETITIVE ZONE FLEXIBILITY TO "LOCK IN" CUSTOMERS TO LONG TERM CONTRACTS. WHAT IS YOUR REACTION TO THIS?

A. Approval of competitive zone pricing flexibility will have absolutely no impact on Qwest's contracting ability. Qwest already has the ability to

contract with customers, absent competitive zone approval. In fact, Qwest currently contracts with customers for services already deemed competitive by the Commission. In addition, Qwest's competitors utilize contracts to secure customers. This is another red herring argument by Dr. Johnson that should be dismissed as irrelevant.

Q. DESPITE HIS OBJECTIONS TO COMPETITIVE ZONES, DR. JOHNSON CONCLUDES THAT QWEST IS CONSTRAINED FROM COMPETING IN THE CURRENT TELECOMMUNICATIONS ENVIRONMENT, ISN'T THAT CORRECT?

A. Yes. I quote Dr. Johnson from Page 43 of this testimony, Lines 7-8:

> While I strongly disagree with U S WEST's proposal, I don't believe the existing rules are adequate to deal with changing competitive conditions.

Q. DR. JOHNSON PROPOSES A CHANGE TO EXISTING COMMISSION RULE 14-2-1108(A) WHICH HE INDICATES WILL PROVIDE QWEST WITH THE PRICING FLEXIBILITY IT NEEDS. IS DR. JOHNSON'S PROPOSED CHANGE EVEN NECESSARY TO ACCOMPLISH HIS INTENT?

A. No. Dr. Johnson adds verbiage to specify that the Commission may classify a service or group of services competitive "within a specified relevant market." (Page 43, Lines 15, 19). The existing rules already

provide for the Commission to classify any "service or group of services" as competitive within the relevant market.

As I've pointed out previously in this testimony, Commission rules define relevant market as:

> Where buyers and sellers of a specific service or product, **or of a group of services or products**, come together to engage in transactions. For telecommunications services, the relevant market may be identified on a service-by-service basis, **a group basis**, and/or by **geographic location**. (R-14-2-1102, A.A.C., emphasis added)

Dr. Johnson's revision to Rule 14-2-1108(A) is already considered in Rule 14-2-1102. His suggested changes add no clarity and certainly will not result in affording Qwest the pricing flexibility it needs to respond to competition where it is occurring.

Rate Design

Q. AT PAGE 77 OF HIS DIRECT TESTIMONY, DR. JOHNSON STATES "...THE UNDERLYING RATIONALE FOR THESE INCREASES-THAT LOCAL SERVICE IS "SUBSIDIZED" BY OTHER SERVICES-IS INVALID..." IS DR. JOHNSON CORRECT?

A. No. He is entirely incorrect. When Qwest's residential local exchange rates are compared to the correct cost basis, as discussed in detail by Dr. Taylor and Mr. Thompson on behalf of Qwest, residential local service rates are clearly subsidized.

Q. IF DR. JOHNSON'S PRESUMPTIONS REGARDING COST ALLOCATION AND ABSENCE OF RESIDENTIAL LOCAL EXCHANGE SUBSIDY ARE INCORRECT, ARE THE REMAINDER OF HIS ARGUMENTS RELATIVE TO LOCAL EXCHANGE PRICING VALID?

A. No.

Q. BEGINNING AT PAGE 84, DR. JOHNSON COMPLAINS THAT QWEST'S ZONE INCREMENT PROPOSAL IN THIS DOCKET GENERATES PRICES THAT ARE INAPPROPRIATELY HIGH. WOULD YOU COMMENT?

A. Yes. Qwest's zone increment proposal establishes rate levels that are appropriately in alignment with Qwest's pending proposal regarding deaveraged UNE loop prices. Failure to align the retail and wholesale prices outside the Base Rate Area in Arizona will create significant pricing anomalies and potential for rate arbitrage. Qwest's proposal is entirely reasonable.

Q. AT PAGE 97, DR. JOHNSON ASSERTS THAT PRICE ELASTICITY OF DEMAND SHOULD BE CONSIDERED IN CALCULATING THE REVENUE IMPACTS ASSOCIATED WITH QWEST'S INTRALATA LONG DISTANCE PRICE PROPOSALS. DO YOU AGREE?

A. No. Please see my rebuttal comments to Mr. Dunkel's positions regarding the lack of price elasticity in Qwest's intraLATA long distance services.

VI. RESPONSE TO MS. ARLEEN STARR

Q. AT PAGE 7 OF HER DIRECT TESTIMONY, MS. STARR COMPLAINS THAT QWEST'S PROPOSAL IN THIS RATE CASE "...IS AN ATTEMPT TO INCREASE MONOPOLY REVENUES WHILE MAINTAINING THE VERY BARRIERS TO COMPETITIVE MARKET ENTRY THAT WILL SUSTAIN THE MONOPOLY." IS SHE CORRECT?

A. No. On the contrary, Qwest's proposal strikes an appropriate balance between several objectives: adjustment of prices to minimize implicit subsidies, alignment of retail and wholesale prices, establishment of a pricing flexibility framework to facilitate competitive parity between Qwest and its competitors, maintenance of affordable prices for consumers and attainment of Qwest's defined revenue requirement in Arizona. Ms. Starr's complaints are clearly off the mark.

1 **Q. AT PAGE 9, MS. STARR MAKES THE FOLLOWING ALLEGATION:**
2 **"...ACCESS REDUCTIONS WILL ALSO LIMIT U S WEST'S ABILITY**
3 **TO ENGAGE IN ANTI-COMPETITIVE PRICING STRATEGIES IN THE**
4 **TOLL MARKET, WHICH WOULD IMPEDE COMPETITION." PLEASE**
5 **RESPOND.**
6 A. Qwest has not engaged in "anti-competitive pricing strategies" in the toll
7 market, nor do we intend to do so. The Commission currently has
8 regulatory guidelines in place that govern the manner in which wholesale
9 and retail prices should be set. Qwest is in full compliance with those
10 guidelines. Additionally, I am unaware of any complaints AT&T has filed
11 with the Commission concerning any instance of inappropriate toll pricing
12 in Arizona. Ms. Starr's allegations are long on rhetoric and short on
13 factual support.
14
15 **Q. AT PAGE 31, MS. STARR SEEMS TO IMPLY THAT QWEST'S**
16 **EVENTUAL ENTRY INTO THE INTERLATA LONG DISTANCE MARKET**
17 **WILL SOMEHOW HAVE A DETRIMENTAL EFFECT ON COMPETITION,**
18 **UNLESS THE COMMISSION TAKES ACTION TO REDUCE QWEST'S**
19 **INTRALATA SWITCHED ACCESS RATES. WOULD YOU COMMENT?**
20 A. Yes. I honestly do not understand the connection Ms. Starr is attempting
21 to make in these comments. Qwest's intraLATA long distance
22 competitors are enjoying tremendous success in capturing market share

from Qwest: since the advent of intraLATA long distance dialing parity, Qwest's intraLATA long distance share in Arizona has continued to trend sharply downward. Eventual Section 271 relief will enable Qwest to strongly compete with AT&T and other interexchange carriers for the interLATA market. At that time, it is likely Qwest will win a portion of the interLATA long distance market share AT&T now holds. Perhaps that eventuality is the "detrimental effect on competition" Ms. Starr alludes to. If so, that issue is well beyond the scope of this docket.

Q. AT PAGE 32, MS. STARR PROVIDES ILLUSTRATIONS OF HOW AT&T IS UNABLE TO COMPETE EFFECTIVELY WITH QWEST IN THE INTRALATA LONG DISTANCE MARKET, AND GOES ON TO INFER THAT QWEST HAS A MONOPOLY IN THE INTRALATA LONG DISTANCE MARKET. WOULD YOU COMMENT?

A. Yes. Ms. Starr omits several facts from her analysis which alter the conclusion. First, her analysis assumes that AT&T must pay Qwest switched access charges for each and every intraLATA minute of use an AT&T customer originates or terminates in Arizona. This is simply a false assumption. AT&T provides intraLATA long distance service via a variety of alternative means that are not assessed switched access charges, including AT&T-owned dedicated facilities, purchase of special access dedicated services from other carriers and purchase of special access

1 services from Qwest. In addition, AT&T has recently taken an equity
2 stake of approximately 40% in Net2Phone, the nation's largest internet
3 protocol (IP) telephony provider. At this time, interLATA or intraLATA
4 long distance calls placed via IP telephony are not assessed switched
5 access charges. Second, AT&T is able to average its costs of providing
6 long distance across interstate and intrastate jurisdictions. In many
7 instances, AT&T's calling plans require the customer to subscribe to
8 AT&T service for all long distance calling, both interstate and intrastate.
9 In this scenario, AT&T's average cost of providing long distance service is
10 well below the revenues it receives for that service. The margin for the
11 long distance minute of use, when considering long distance in the holistic
12 sense, is substantially greater than that displayed in Ms. Starr's analysis.
13
14 **Q. AT PAGE 36, MS. STARR SUGGESTS THAT QWEST'S CURRENT**
15 **SWITCHED ACCESS CHARGES ARE "...AN ENORMOUS ECONOMIC**
16 **BARRIER FOR COMPETITORS TO OVERCOME." IS THIS**
17 **CORRECT?**
18 A. No. The competitive intraLATA long distance market in Arizona is
19 thriving, even in view of the current level of Qwest's intraLATA switched
20 access prices. However, as discussed by Mr. McIntyre, Qwest is
21 proposing substantial reductions to its switched access prices in this
22 docket. Switched access charges are not a barrier to competitive entry

now, and the proposed price reductions should stimulate even more competitive entry.

Q. AT PAGE 38, MS. STARR STATES: "ARIZONA CUSTOMERS WILL SUFFER IN THE LONG RUN BECAUSE U S WEST WILL HAVE THE ABILITY TO RAISE ITS PRICES ONCE COMPETITIVE PRESSURE ON ITS TOLL SERVICES IS REDUCED OR ELIMINATED." WOULD YOU COMMENT?

A. Yes. I find Ms. Starr's comments somewhat surprising in view of AT&T's recent attempt to increase interstate long distance rates, which was subsequently withdrawn only after strong expression of concern by the FCC. Clearly, AT&T's price increase strategy was not related to elimination of competition in the hotly competitive interstate long distance market. Nevertheless, Qwest believes that intraLATA long distance competition will intensify in the near future in Arizona, as CLECs continue to capture local exchange market share and ramp up their efforts to provide full service local and toll services to their customers. Coupled with continued creative packaging and bundling of services by interexchange carriers, rapid growth of IP telephony and increased substitution of wireless services for traditional landline services, it is not reasonable to assume that competition in the intraLATA long distance market will diminish in the foreseeable future. Rather than suffering,

Arizona consumers will enjoy an ever expanding array of competitive long distance alternatives.

VII. CONCLUSION

Q. PLEASE SUMMARIZE YOUR TESTIMONY.

A. A variety of parties, including Mr. William Dunkel, Dr. Francis Collins, Dr. Lee Selwyn, Dr. Ben Johnson and Ms. Arleen Starr have filed testimony in this docket suggesting Qwest's proposals regarding Competitive Zone classification and rate design are inappropriate in Arizona. A common thread runs through the parties' complaints around Qwest's Competitive Zone proposal: Qwest should continue to be constrained from competing on par with its competitors in the same manner in which these competitors target their services. The parties are wrong. Qwest's proposal is entirely consistent with the objectives and guidelines of the Telecommunications Act of 1996 (the Act), the FCC's subsequent rulings in support of the Act and prevailing ACC rules. The overarching goal of the Act is to open markets to competition and to establish an environment in which telecommunications competitors may compete vigorously, creatively and on equal footing. Qwest's Competitive Zone proposal establishes a mechanism to promote fair competition in geographic areas in which competitors have chosen to offer alternatives to Qwest's services. If the

1 Commission approves Qwest's Competitive Zone proposal, Arizona
2 consumers will be the ultimate beneficiaries of the fruits of full, open and
3 fair competition.
4
5 The parties have also chosen to oppose Qwest's rate design for retail
6 services, which was proposed to support the positive revenue requirement
7 in Arizona identified by Qwest witness Mr. George Redding. Again, the
8 parties are wrong. Qwest's proposal strikes an appropriate balance
9 between multiple objectives: the need to begin to remove implicit
10 subsidies from Qwest's rate structure pursuant to the mandates of the
11 Act, the need to establish cost-based prices to enable economically
12 efficient competition to enter all markets throughout Arizona, the need to
13 align "deaveraged" wholesale and retail pricing structures to avoid
14 creation of pricing anomalies and opportunity for rate arbitrage, the need
15 to simplify and streamline traditional rate structures, the need to comply
16 with existing ACC pricing rules and the need to minimize the overall
17 impacts of rate changes on Arizona customers to the extent practicable.
18 A major recurring theme in the parties' testimony in opposition to the retail
19 pricing design in this docket is that the loop cost should be treated as a
20 cost to be shared among virtually all retail services Qwest offers in
21 Arizona. As discussed in the testimonies of Mr. Jerrold Thompson and
22 Dr. William Taylor, this "cost allocation" concept is not valid. When

Qwest's retail pricing proposal is viewed in the context of TSLRIC as the proper cost basis, the proposal is in full alignment with the policy objectives outlined above.

In view of the body of evidence supplied in my direct, supplemental direct and rebuttal testimonies in this Docket, I respectfully urge the Commission to approve Qwest's Competitive Zone and retail rate design proposals as filed.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.

BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF QWEST CORPORATION, A COLORADO CORPORATION, FOR A HEARING TO DETERMINE THE EARNINGS OF THE COMPANY, THE FAIR VALUE OF THE COMPANY FOR RATEMAKING PURPOSES, TO FIX A JUST AND REASONABLE RATE OF RETURN THEREON AND TO APPROVE RATE SCHEDULES DESIGNED TO DEVELOP SUCH RETURN	)	DOCKET NO. T-01051B-99-0105

EXHIBITS OF

DAVID L. TEITZEL

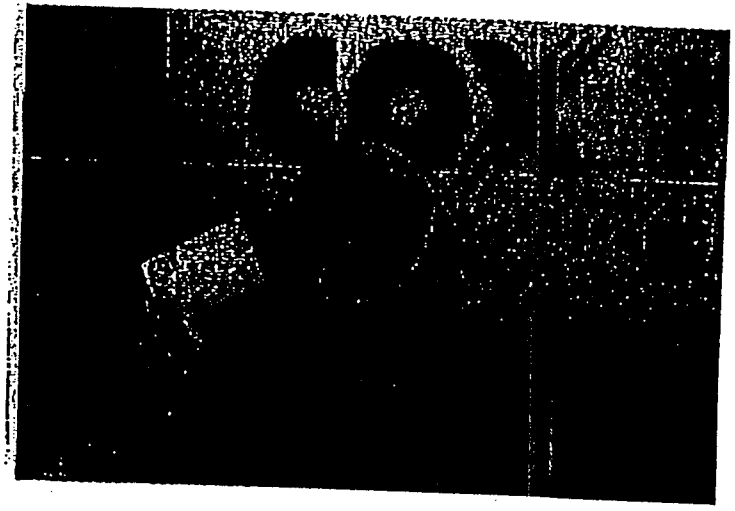
QWEST CORPORATION

AUGUST 21, 2000

INDEX OF EXHIBITS

DESCRIPTION	EXHIBIT
Cox Bundling Strategy	 1
Oregon PUC Memo – Competitive Zones	 2
Cox Win Back Tariff	 3
Proprietary Information	 4

Bundling Strategy Development



"One Company, One Bill, One Step at a Time"

COMMUNICA
Now you're

The Bundles are Coming...

Bundling vs. One Stop Shopping

- Bundling is adding one product to either one or two other products to create a new, multi-category product under the Cox Brand.
- One Stop Shopping is Simply providing a Single location (Retail, Call Center, Direct Sales) which allows customers to obtain multiple category products/services. However, these products/services are not necessarily provided under the same brand

What Bundling is Not

- Bundling **is not** about *creating* extensive choices for the customer and therefore the creation of unmanageable operational complexity.

- Bundling **is about** *simplifying* choices for customers and creating preassembled target groups of services which can be easily purchased.

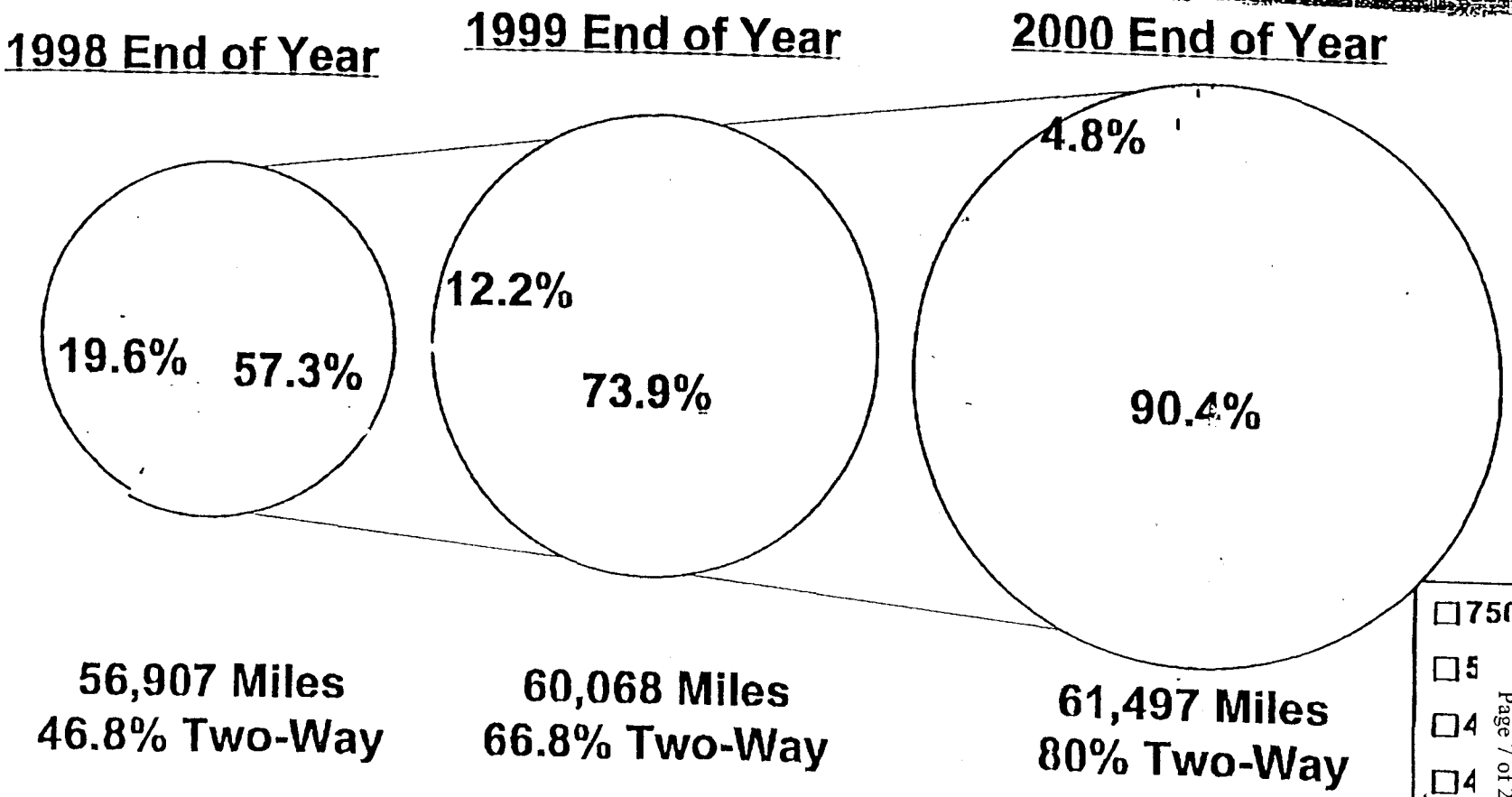
What is a Cox Bundle?
What is a Cox Package?

- **Cox Bundle: A combination of two or more product categories (video, voice, data) conveniently sold and serviced by Cox.**
  - Cox Digital Cable, Cox@Home, Cox Digital Telephone
  - Cox Digital Cable & Cox@Home
  - Cox Cable & Cox Digital Telephone
- **Cox Package: A combination of two or more elements within a single product category.**
  - Cox Digital Telephone & Solutions Package
  - Cox Cable & Premium Channels

The Steps We are Taking

- Network Upgrades

New Service Network Readiness is Job One!



New Service Deployment

Data		Telephony		Digital Cable	
Orange County	12/96	Orange County	9/97	Orange County	10/97
San Diego	5/97	Omaha	11/97	Omaha	12/97
Phoenix	6/97	New England	12/97	New England	12/97
Omaha	8/97	San Diego	5/98	New Orleans	2/98
New England	8/97	Phoenix	10/98	Hampton Roads	4/98
Hampton Rds.	11/97	*Oklahoma City*	*3Q99*	Tucson	6/98
Oklahoma City	2/98			San Diego	1Q99
New Orleans	10/98			Phoenix	1Q99
Las Vegas	10/98			Oklahoma City	1Q00
Ft. Walton	*4Q99*			*Las Vegas*	
				Ft. Walton	

What it Will Require

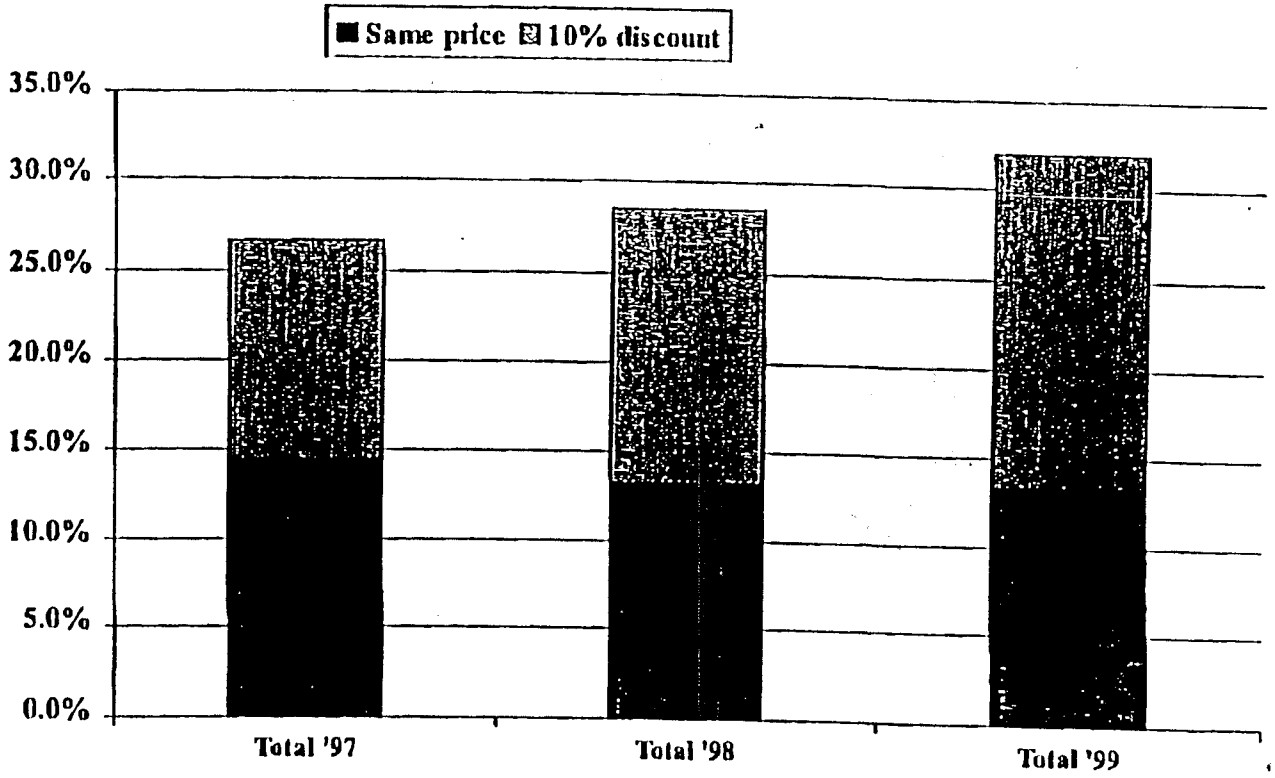
- Network Upgrades
- Brand Expansion

Continued Brand Strength

"This company values its customers and strives to provide them the best product and service at a fair price."

% who agree	1998	1997
CABLE COMPANY	74.1	+0.7PT
LOCAL PHONE CO.	66.3	- 3.7
LONG DISTANCE CO.	65.5	- 5.4
ELECTRIC CO.	67.1	+3.0

Interest In Cox Digital Telephone Continues to Grow



We Are Delivering...

- *"Customers who have jettisoned their local telephone company in favor of service from their cable TV operator rank the quality of the service higher than the bulk of local telephone subscribers, according to a study released by J. D. Power and Associates."*

What it Will Require

- Network Upgrades
- Brand Expansion
- Operational & Financial Flexibility

Simple Objectives

- Make it Easy and Rational to Buy Video, Voice, and Data Services From Cox Rather Than From Up to 3 Separate Providers
- Make it More Difficult/Painful to Downgrade
- Determine Whether Customers Will Make Multiple Purchase Decisions Simultaneously or Whether They Prefer Serial Purchases.

Overall Goal

Utilize our ability to offer integrated bundles of services as a competitive advantage to drive incremental customer profitability.

- ***Drive Incremental penetration***
- ***Improve retention***
- ***Enhance competitive position***
- ***Reduce customer acquisition, upgrade & retention costs***

- In general, the challenge is to de-emphasize specific product price, and build loyalty on a multiproduct level

Progress to Date:

- Extensive Review of Existing Industry Research and Analysis (Forrester, IDC, Yankee, and others).
- Qualitative Research Among Current 1, 2 and 3 Product Customers in Diverse Markets.
- Bundling Summit Held Incorporating Input/Experiences of Several Field Locations.
- Development of GO TO MARKET Plan.
- MIS Walk-Through of Requirements.

Current Situation

- Large Video Customer Base Coupled with Telephone's Natural Deep Penetration Represents Large Target Opportunity for Bundled Services.
- New Services and Associated Value Proposition are Generally Achieving Penetration Targets, Therefore Current 2 Service Bundles (Video/Phone, Video/Data, and Data/Phone) are Plentiful.
- Although 3 Product Bundle Customers Exist, We have Identified the Need for Additional Economic Benefit or Retentive Element for These Bundles.

Overall Game Plan

- ✓ Build Cox Brand as a Viable Provider of Video, Voice & Data Services - "Now you're living."
- ✓ Evaluate Extension of 2 Tier Pricing Structure to Video Products.
- ✓ Identify Which Bundles Appeal to Cox, Customers, and Can be Offered, Provisioned, and Serviced.
- ✓ Identify Which Target Households These Bundles Appeal to.
- ✓ Creation of a New Level Of Recognition of Highest Value Cox Customers
- ✓ Test & Retest. Measure & Closely Monitor

Short Term Strategy

- Bolster the Sell-in of Current 2 Product Bundles and Maintain Associated "Preferred Customer Discounts"
  - **<u>Vigorously Reinforce</u> Current 2 Product Discount & Reinforce in Bill**
- Develop Target Bundles for Prospective 3 Product Customers
- Profile Current 2 & 3 Product Customers
- Manage CPNI Issues
- Define Entire Customer Experience and Develop Special Level Customer Care

Long Term Strategy

- Billing - Choice of single bill or separate statements
  - Monthly Reinforcement of Status, Value Received
  - Direct Debit
- Customer Service - Special Number with Quick Access to Subject Matter Experts
  - Priority Queuing
  - Empowered to Satisfy
- Sales Process - Simple, Easy, One Call
- Install - 1 truck roll or customer choice
- Rate Guarantees
- Time Specific Appointments or Shorter Time Windows

David Pugliese
Executive Director, Voice & Data Marketing

David Pugliese joined Cox Communications in Atlanta, Georgia in February 1996 as Executive Director of Voice & Data Marketing. In this role, David was accountable for the development of Cox's marketing strategy and tactics associated with several planned new voice & data services including Cox Digital Telephone-*the better choice in local telephone service*, Cox @Home-*the High Speed Internet Service*, and Cox Long Distance by Frontier. Currently, David has overall responsibility for product management & marketing of Cox Digital Telephone service, the key initiative of bundling of video, voice, and data services, and also competitive intelligence.

Prior to joining Cox and the cable industry, David developed extensive telecommunications industry marketing expertise through a number of positions with Frontier Corporation and AT&T. While at Frontier from 1994-1996, David held key positions of General Manager-Consumer Marketing and Vice President of Marketing for Frontier Cellular, a joint venture between Frontier Corporation and Bell Atlantic/NYNEX Mobile Communications. At AT&T from 1982-1994, David held a number of positions within the Business and Consumer Marketing & Sales organizations.

PUBLIC UTILITY COMMIS
Telecommunications Divisio
Interoffice Correspondence

DATE: March 28, 2000

TO: Commissioners Eachus, Smith, and Hamilton
Through Dave Booth and Phil Nyegaard

FROM: Marlene Gorsuch

SUBJECT: U S WEST Communications – Pricing Flexibility

The purpose of this report is to notify the Commission that the criteria have been met for U S WEST Communications to receive pricing flexibility, pursuant to ORS 759.050(5), in forty-nine additional telephone exchanges.

The Commission first set criteria for GTE Northwest (GTE) and U S WEST Communications (USWC) to receive pricing flexibility in Order No. 96-021, dockets CP 1, CP 14, and CP 15. The criteria have been repeated since January 1996 in orders by which the Commission granted authority to competitive providers to provide local exchange service in competition with the incumbents. USWC has met the criteria for pricing flexibility for switched service in several exchanges, as summarized here:

1. Many competitive local exchange carriers (CLEC's) have certificates of authority to provide service in all USWC exchanges.

2. USWC has filed a tariff for interim local number portability, and the Commission has approved the tariff.

3. Staff has notified the Commission that a mutual exchange of telephone traffic exists between USWC and a CLEC in each of several exchanges.

We use different criteria for dedicated transmission service, i.e. private line service. On several occasions, the Commission has granted to USWC, as well as GTE, Sprint/United, and CenturyTel, pricing flexibility for dedicated transmission throughout their service areas.

USWC advised the PUC staff by letter dated March 8, 2000, that a mutual exchange of traffic exists in forty-nine exchanges:

Albany	Grants Pass	Pendleton
Ashland	Hermiston	Phoenix/Talent
Astoria	Independence/Monmouth	Prineville
Athena/Weston	Jacksonville	Rainier
Baker	Jefferson	Redmond
Bend	Junction City	Rogue River
Blue River	Klamath Falls	Roseburg
Camp Sherman	Lapine	St. Helens
Central Point	Leaburg	Seaside
Corvallis	Lowell	Siletz
Cottage Grove	Madras	Sisters
Culver	Medford	Stanfield
Dallas	Milton-Freewater	Toledo
Falls City	Newport	Umatilla
Florence	Oakland/Sutherlin	Veneta
Gold Hill	Oakridge	Warrenton
		Woodburn/Hubbard

Staff contacted the competing CLECs: ATI, BG ENTERPRISES, FRONTIER (GLOBAL CROSSINGS), RIO COMMUNICATIONS, STERLING INTERNATIONAL (1-800-RECONEX), SUNRIVER TELCOM, TELNET, and UNITED COMMUNICATIONS. They confirmed USWC's information.

By this report staff notifies the Commission that a mutual exchange of traffic exists between USWC and an authorized CLEC in the above forty-nine exchanges. Therefore, USWC now gets pricing flexibility for switched service in those exchanges. No Commission action is required.

On the attached pages are shown the exchanges where USWC and GTE have pricing flexibility pursuant to ORS 759.050 and Order No. 96-021. There are now only seven exchanges where USWC does not have pricing flexibility: Cannon Beach, Harrisburg, Mapleton, Marcola, Sumpter, Walla Walla (Stateline), and Westport.

cc: Mike Weirich, Assistant Attorney General
Don Mason, U S West Communications
Kay Barley, U S West Communications

Pricing Flexibility

U S WEST Communications has pricing flexibility in the following exchanges pursuant to ORS 759.050 and Order No. 96-021, dockets CP 1, CP 14, and CP 15.

U S WEST

Albany
Ashland
Astoria
Athena/Weston
Baker
Bend
Blue River
Burlington
Camp Sherman
Central Point
Corvallis
Cottage Grove
Culver
Dallas
Eugene/Springfield
Falls City
Florence
Gold Hill
Grants Pass
Hermiston
Independence/Monmouth
Jacksonville
Jefferson
Junction City
Klamath Falls
Lake Oswego
Lapine
Leaburg
Lowell
Madras
Medford
Milton-Freewater
Newport
North Plains
Oak Grove/Milwaukie
Oakland/Sutherlin
Oakridge
Oregon City
Pendleton
Phoenix/Talent
Portland
Prineville
Rainier
Redmond
Rogue River
Roseburg
Salem
St. Helens
Seaside
Siletz
Sisters
Stanfield
Toledo
Umatilla
Veneta
Warrenton
Woodburn/Hubbard

March 28, 2000

Pricing Flexibility

GTE Northwest has pricing flexibility in the following exchanges pursuant to ORS 759.050 and Order No. 96-021, dockets CP 1, CP 14, and CP 15.

GTE Northwest

Bandon
Beaverton
Brookings
Coos Bay
Coquille
Cove
Elgin
Enterprise
Forest Grove
Gold Beach
Gresham
Hillsboro
Hoodland
Imbler
Joseph
La Grande
McMinnville
Murphy/Provolt
Newberg
Scholls
Sherwood
Stafford (Wilsonville)
Tigard
Union
Wallowa

March 28, 2000

Arizona Corporation Commission
Docket No. T-1051B-99-105
Qwest Corporation – DLT-3
Exhibits of David L. Teitzel
Page 1 of 2 August 21, 2000

ORIGINAL

SECTION 4 - Promotional Offerings

4.1 Promotional Offerings

The Company, from time to time, may make promotional offerings of its services which may include waiving or reducing the applicable charges for the promoted service. The promotional offerings may be limited as to the duration, the date and times of the offerings and the locations where the offerings are made.

4.2 Competitive Response. (N)

A. Residence Competitive Response Program

1. Description:

The Residence Competitive Response Program is an offering to residence customers who have left Cox for another telecommunications provider, for their local exchange service, or for their intraLATA and interLATA MTS services, or to those who choose to stay with Cox after a solicitation from a competing local service provider. In accordance with the terms of this Residence Competitive Response Program Cox may offer incentive(s) to such residential customers.

2. Terms and Conditions:

a. This competitive response offering may be offered to customers returning to Cox from a competing telecommunications provider, or those who choose to stay with Cox after a solicitation from a competing local service provider.

b. Periods and provisions of this offer will be determined by Cox.

c. Cox reserves the right to discontinue this offer, without further proceedings or approvals, upon fourteen (14) days' notice to the Arizona Corporation Commission.

d. Qualifying residential customers are required to have a satisfactory credit rating with in accordance with Section 2.5 above.

e. Cox shall use reasonable business efforts so that similarly situated customers are offered similar incentive credits in similar circumstances.

f. The Residence Competitive Response Program is a competitive response only and is not available for resale.

3. Rates and Charges:

a. Customers who qualify under the Terms and Conditions of this tariff may receive either a waiver of the current nonrecurring charge, up to two months of recurring rates, or both, on selected services determined by the Company. Amounts and types of the waivers will vary. In addition, residential Customers may be eligible for waivers of intraLATA and interLATA MTS charges.

b. Total local exchange service charges waived will not exceed $100.00 per customer location. (N)

Issued By: Martin Corcoran
Director, Tariff Development
Cox Communications, Inc.
1400 Lake Hearn Drive,
Atlanta, GA 30319

ADMINISTRATIVELY
APPROVED FOR FILING

Arizona Corporation Commission
Docket No. T-1051B-99-105
Qwest Corporation – DLT-3
Exhibits of David L. Teitzel
Page 2 of 2 August 21, 2000

ORIGINAL

4.2 Competitive Response, contid.

B. Business Competitive Response Program:

1. Description:

The Business Competitive Response Program is an offering to business customers who have terminated or canceled all or part of their Cox services and established service with another telecommunications provider, or to those who choose to stay with Cox after a solicitation from a competing local service provider. In accordance with the terms of this Business Competitive Response Program, Cox may offer incentive(s) to such business customers.

2. Terms and Conditions:

a. The Business Competitive Response Program may be offered to business customers returning to Cox from a competing telecommunications provider, or to those who choose to stay with Cox after a solicitation from a competing local service provider.

b. The Company may offer qualifying business customers incentives in the form of credits on the business customers' bills after those business customers actually establish the agreed upon service with Cox.

c. Business customers may receive the incentive credit(s) only in connection with services that are established with and provided by Cox.

d. On contractual services, business customers are required to sign a contract in order to receive the incentives described below.

e. Business customers who receive the Competitive Response Program credit(s) are required to remain with Cox for a minimum of one year or be billed all of the nonrecurring charge(s) and monthly rate(s) waived.

f. Cox reserves the right to discontinue this offer, without further proceedings or approvals, upon fourteen (14) days' notice to the Arizona Corporation Commission.

g. Periods and provisions of this offer will be determined by Cox.

h. Qualifying business customers are required to have a satisfactory credit rating with in accordance with Section 2.5 above.

i. Cox shall use reasonable business efforts so that similarly situated customers are offered similar incentive credits in similar circumstances.

j. The Business Competitive Response Program is a competitive response only and is not available for resale.

3. Rates and Charges:

a. Business customers who qualify for this tariff under the Terms and Conditions above may receive a maximum of either a waiver of the current nonrecurring charge(s), or up to two months of the current monthly rate(s), or both, on selected services as determined by Cox. In addition, business customers may be provided waivers of intraLATA and interLATA MTS charges.

b. Incentive amounts are calculated on the first month's nonrecurring charge(s) and monthly rate(s). The total credit amount will not exceed the total nonrecurring charge(s) plus two months service of the monthly rate(s).

(N)

ADMINISTRATIVELY
APPROVED FOR FILING

PROPRIETARY INFORMATION

Page	Line	Proprietary Information
58	22	**Redacted** Residence Resold Access Lines – Bisbee
58	23	**Redacted** Residence Resold Access Lines – Chandler Main

BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF QWEST CORPORATION, A COLORADO CORPORATION, FOR A HEARING TO DETERMINE THE EARNINGS OF THE COMPANY, THE FAIR VALUE OF THE COMPANY FOR RATEMAKING PURPOSES, TO FIX A JUST AND REASONABLE RATE OF RETURN THEREON AND TO APPROVE RATE SCHEDULES DESIGNED TO DEVELOP SUCH RETURN	)	DOCKET NO. T-1051-B-99-105 AFFIDAVIT OF DAVID L. TEITZEL
STATE OF WASHINGTON	)	
COUNTY OF KING	)	
	)	
	:	
	)	SS

I, David L. Teitzel, of lawful age being first duly sworn, deposes and states:

1. My name is David L. Teitzel. I am Directory, Product and Market Issues for Qwest Corporation, formerly known as U S WEST Communications, Inc., in Seattle, Washington. I have caused to be filed written rebuttal testimony and exhibits in support of Qwest Corporation in Docket No. T-01051-B-99-105.

2. Attached hereto and made a part hereof for all purposes is my rebuttal testimony.

3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct to the best of my knowledge and belief.

Further affiant sayeth not.

David L. Teitzel

SUBSCRIBED AND SWORN to before me this 16th day of August, 2000.

ANGIE LEIFER
COMMISSION EXPIRES
NOTARY PUBLIC
8-08-02
STATE OF WASHINGTON

Notary Public

My Commission Expires:
8/8/02

BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF U S WEST COMMUNICATIONS, INC., A COLORADO CORPORATION, FOR A HEARING TO DETERMINE THE EARNINGS OF THE COMPANY, THE FAIR VALUE OF THE COMPANY FOR RATEMAKING PURPOSES, TO FIX A JUST AND REASONABLE RATE OF RETURN THEREON, AND TO APPPROVE RATE SCHEDULES DESIGNED TO DEVELOP SUCH RETURN.	)	DOCKET NO. T-01051B-99-0105

REBUTTAL TESTIMONY

OF

PETER C. CUMMINGS

QWEST CORPORATION

August 21, 2000

REBUTTAL TESTIMONY OF PETER C. CUMMINGS
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Industry Group Betas	PCC-01
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EXECUTIVE SUMMARY

1. Current Responsibilities:

My name is Peter C. Cummings and my business address is 1600 Bell Plaza, Room 3005, Seattle, Washington 98191. I am employed by Qwest Corporation (Qwest) as Director - Finance and Economic Analysis.

My job responsibilities include financial analysis of capital costs and capital structure of Qwest Corporation. I develop cost of capital estimates for company cost studies, capital budgeting, and economic analysis. I also testify in state rate cases, cost dockets, and other regulatory proceedings on rate of return, capital structure, and other financial issues.

2. Purpose of Testimony:

I am appearing before the Corporation Commission to present rebuttal testimony related to cost of capital and capital structure for Qwest Corporation (Qwest), formerly U S WEST Communications, Inc. (USWC). The purpose of my rebuttal testimony is to comment on the testimony filed by Charles W. King on

behalf of The United States Department of Defense and Federal Executive Agencies, by Stephen G. Hill on behalf of the Arizona Corporation Commission Staff, and John B. Legler on behalf of the Residential Utility Consumer Office.

3. Summary of Testimony:

All parties have accepted the company's updated capital structure of 47.6% debt and 52.4% equity and embedded cost of debt of 7.39% as shown in my supplemental direct testimony.

Mr. King has underestimated the required return on equity investment for Qwest corporation for three reasons – an error in DCF model estimates for the risk comparable telephone group, reliance upon the DCF estimate for pre-merger U S WEST, Inc., and reliance upon an electric utility company group that is not risk comparable to Qwest. When corrected for the Verizon dividend error, Mr. King's DCF analysis of the three largest telephone companies provides a reasonable estimate of the required equity return for Qwest – the range of 12.73% to 15.18% with a midpoint of 14.12%.

Mr. Hill has underestimated Qwest's cost of equity capital, principally by his assumption that Qwest's cost of equity range is bounded by the cost of equity for gas distribution companies at the lower end and by its peer group of large telcos at

the upper end. There are three areas where Mr. Hill's cost of equity estimation methodology significantly departs from accepted financial theory and practice – using distorted capital market data for pre-merger U S WEST in his analysis, adjustments to expected growth rate inputs to DCF models, and implementation of the Capital Asset Pricing Model. Correction of these methodological issues would result in a range of equity cost estimates of 13.66% to 14.43%.

Dr. Legler presents financial models with cost of equity estimates ranging from less than 7% to nearly 20%. From this data, Dr. Legler concludes that the cost of equity capital for Qwest is in the range of 11.0% to 12.0%. My overall conclusion is that Dr. Legler's recommendation on the cost of equity capital for Qwest is primarily based upon his own opinion and not upon capital market data and financial models. To accept Dr. Legler's recommendation, one would have to have more confidence in Dr. Legler's opinion than in financial models and capital market data.

4. Conclusion and Recommendation

I believe the testimony presented by Mr. King, Dr. Legler, and Mr. Hill underestimates the cost of equity capital for Qwest corporation. My recommended range for a fair return on equity capital invested to provide telephone service in Arizona is the range of cost of equity estimates of 13.5% to 14.5% and my specific

recommendation for the Commission allowed return on equity is the midpoint of the range, 14.0%.

Combining the fair return on book equity range and Qwest's capital structure and embedded debt cost, my recommendation for a fair overall return on rate base is the range of 10.59% to 11.12% with a midpoint recommendation of 10.86% which is calculated as follows:

	Percent	Cost	Weighted Cost
Debt	47.6%	7.39%	3.52%
Equity	52.4%	14.0%	7.34%
Overall Return			10.86%

IDENTIFICATION OF WITNESS

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND CURRENT POSITION.

A. My name is Peter C. Cummings and my business address is 1600 Bell Plaza, Room 3005, Seattle, Washington 98191. I am employed by Qwest Corporation (Qwest) as Director - Finance and Economic Analysis.

Q. ARE YOU THE SAME PETER C. CUMMINGS THAT FILED DIRECT TESTIMONY IN THIS DOCKET?

A. Yes, I am. My work experience and qualifications are described in that testimony.

PURPOSE OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. The purpose of my rebuttal testimony is to comment on the testimony filed by Charles W. King on behalf of the United States Department of Defense and Federal Executive Agencies, by Stephen G. Hill on behalf of the Arizona Corporation Commission Staff, and John B. Legler on behalf of the Residential Utility Consumer Office.

CAPITAL STRUCTURE AND COST OF DEBT

Q. WHAT ARE THE INTERVENING PARTIES POSITIONS ON THE APPROPRIATE CAPITAL STRUCTURE AND COST OF DEBT FOR QWEST'S ARIZONA OPERATIONS?

A. Mr. King on behalf of DOD and Federal Executive Agencies, Dr. Legler on behalf of the Residential Utility Consumer Office, and Mr. Hill on behalf of the Arizona Corporation Commission Staff all accept the company's updated capital structure of 47.6% debt and 52.4% equity and embedded cost of debt of 7.39% as shown in my supplemental direct testimony.

Q. WHAT ARE THE REMAINING ISSUES RELATED TO COST OF CAPITAL?

A. The only remaining issue is estimation of the cost of equity capital.

COMMENT ON THE TESTIMONY OF CHARLES W. KING

Q. WHAT IS MR KING'S ESTIMATE OF THE COST OF EQUITY CAPITAL?

A. Mr. King estimates the cost of equity capital for Qwest Corporation at 11.5%.

Q. IS 11.5% A REASONABLE ESTIMATE OF INVESTOR EXPECTATIONS FOR COMMITMENT OF EQUITY CAPITAL TO PROVIDE PLANT AND EQUIPMENT TO PROVIDE TELEPHONE SERVICES?

A. No. I believe that Mr. King has seriously underestimated the cost of equity capital investment through his choice of financial modeling techniques, selection of proxy companies for analysis, and interpretation of capital market data.

Q. WHAT DOES MR. KING SAY ABOUT THE HOPE NATURAL GAS DECISION STANDARD THAT, "THE RETURN TO THE EQUITY OWNER SHOULD BE COMMENSURATE WITH THE RETURNS ON INVESTMENTS IN OTHER ENTERPRISES HAVING CORRESPONDING RISKS?"

A. Mr. King says, "Thus, if "return" is defined as the earnings of an equity investment relative to its current market price, then the comparable earnings test becomes a cipher. All returns are comparable with all other returns."

Q. ARE ALL RETURNS REALLY COMPARABLE WITH ALL OTHER RETURNS?

A. Absolutely not. What Mr. King has defined above is an earnings/price ratio. It is obvious that the ratio of earnings and price (more often expressed as

price/earnings ratio) varies widely among companies. This can be easily verified by casual inspection of the daily stock listings in most newspapers.

Q. DO YOU AGREE WITH MR. KING THAT "IF US WEST [QWEST] CAN EARN A RETURN ON ITS INVESTMENT COMPARABLE TO THAT REQUIRED BY ITS OWN SHAREHOLDERS AND BY SHAREHOLDERS OF COMPANIES OF COMPARABLE RISK, THEN IT SHOULD HAVE NO DIFFICULTY IN ATTRACTING AND MAINTAINING CREDIT?"

A. Yes. Mr. King is correctly defining the cost of equity capital as an opportunity cost -- the return required by investors for alternative investments of equivalent risk. Mr. King goes on to say that , "Investors would have no reason to shun U S WEST in favor of other investment opportunities."

Q. WHAT ARE ALTERNATIVE INVESTMENTS OF EQUIVALENT RISK?

A. As explained in my direct testimony, today's capital markets provide a myriad of investment alternatives to the investor. The cost of capital is the opportunity cost of foregoing the next best alternative investment. I agree with Mr. King that the companies most comparable to Qwest Corporation are telephone companies in the same business of providing local exchange, intraLATA toll and toll access services. Where Mr. King and I disagree is in the selection of other companies of comparable risk.

Q. ARE ELECTRIC UTILITIES COMPARABLE IN RISK TO QWEST CORPORATION?

A. Mr. King has made an assumption, unsupported by any data, that the electric utility industry is risk comparable to Qwest. Mr. King's rationale is simply that they, "are traditional regulated utilities with geographically defined franchise areas that are now experiencing growing competition and considerable industry restructuring."

There are some electric utility companies included in my analysis of comparable risk companies based on the criteria of bond ratings and cash flow variability. Also included in that group are non-regulated companies which have similar risk measures. Mr. King dismisses the quantitative measures of risk and says that only the electric utility companies are risk comparable to Qwest and that the non-regulated companies are not risk comparable. It is my conclusion that, taken as a whole, the entire group or portfolio of comparable companies presented in my testimony is risk comparable to Qwest and that picking out only the companies with the lowest equity cost model results, as Mr. King has done, biases the result. Picking out only the higher equity cost model results (such as the medical products companies) would be equally as wrong.

Q. WHAT METHOD DOES MR. KING USE TO ESTIMATE THE MARKET DETERMINED RATE OF RETURN ON EQUITY CAPITAL INVESTMENT IN QWEST'S ARIZONA OPERATIONS?

A. Mr. King places primary reliance upon a Discounted Cash Flow "DCF" procedure and then considers the Capital Asset Pricing Model to measure the relative riskiness of different companies.

Q. WHAT ARE THE RESULTS OF MR. KING'S DCF ANALYSIS?

A. Mr. King provides a DCF estimate for pre-merger U S WEST of 10.22%, estimates for Bell Companies (Verizon, BellSouth, and SBC) of 12.01% to 15.18%, averaging 13.31%, and estimates of 34 electric utility companies ranging from 9.06% to 14.83%, and averaging 11.53%.

Q. WHAT COMPANIES DOES MR. KING CONSIDER TO BE MOST RISK COMPARABLE TO QWEST [U S WEST] IN ARIZONA?

A. Mr. King says that the most comparable companies are the Regional Bell Holding Companies and GTE. This group of companies now consists of Verizon, BellSouth, and SBC. Mr. King's DCF estimate of the cost of equity capital for this group is 13.31%.

Q. DID MR. KING MAKE ANY ERRORS IN HIS DCF ANALYSIS OF THIS GROUP OF COMPANIES?

A. Yes. Mr. King has seriously underestimated the dividend yield for Verizon, the new company formed by the merger of Bell Atlantic and GTE. Mr. King shows next years dividend at $0.20 and the dividend yield at 0.36%. Prior to their merger on June 30, 2000, Bell Atlantic paid an annual dividend of $1.54 and GTE paid an annual dividend of $1.88. The combined company has indicated an annual dividend of $1.54 going forward. Correcting Mr. King's Table 1 on page 16 of his testimony would show next years dividend of $1.54, a dividend yield of 2.81% and a DCF return of 14.46%.

Q. WITH THIS CORRECTION, WHAT ARE THE DCF ESTIMATES FOR THE TELEPHONE COMPANIES?

A. The corrected results are as follows:

Verizon	14.46%
BellSouth	12.73%
SBC	15.18%

The three company average is 14.12%.

Q. PLEASE COMMENT ON MR. KING'S INCLUSION OF "CLASSIC" DCF RETURN FOR U S WEST IN HIS RANGE OF ESTIMATES.

A. While Mr. King agrees with my testimony that U S WEST's stock performance was distorted by market activity surrounding the pending merger with Qwest, he includes a DCF estimate for U S WEST (based upon limited data) in his range of estimates. By including this distorted estimate for U S WEST and excluding his estimates for Verizon and SBC, Mr. King subjectively defines a required equity return range for Qwest Corporation to be 10.22% to 12.73%. I believe Mr. King's range is downwardly biased by this quite selective inclusion and exclusion of data.

Using Mr. King's data (corrected for the Verizon dividend) along with his characterization of the Regional Bell Companies as most comparable to Qwest's telephone operations, a more realistic range would be that defined by the three largest telephone companies. Because pre-merger U S WEST was trading as a derivative of Qwest and significantly influenced by arbitrage trading relative to pricing of the merger and speculation about further business combinations affecting both U S WEST and Qwest, it is not reasonable to include pre-merger U S WEST in the required return analysis. Further complicating any DCF analysis was the announcement that U S WEST would pay dividends at the annual rate of $2.14 prior to the merger and that Qwest intended to pay an annual dividend of $0.05 subsequent to merger consummation.

The range of DCF estimates (using Mr. King's data) for the three largest telephone companies is 12.73% to 15.18% and the average is 14.12%.

Q. DO YOU AGREE WITH MR. KING'S STATEMENT THAT "THE HISTORICAL RISK PREMIUM MODEL IS BOTH CONCEPTUALLY AND STATISTICALLY SO FLAWED AS TO BE WITHOUT VALUE?"

A. No. Finance theorists and finance practitioners have consistently advocated the use of historical data to estimate the expected market risk premium over the risk free rate obtained from investment in government securities. For example:

> R_m is the expected return on an average risk asset. Analysts have used two ways to determine the average expected return. One is a risk premium approach: the long term historical return on the risk-free asset is subtracted from the historical return on a proxy for all assets. ... Analysts also use an estimate of the expected market premium. This estimate may come from information derived from security analysts working in money management companies whose job it is to make forecasts for individual stocks. Putting all the forecasts together produces a consensus estimate of the expected U.S. stock market return.
>
> (Diana R. Harrington, Corporate Financial Analysis, 4th Ed., Homewood, IL: Richard D. Irwin, 1993, p. 208.)

In its Financial Executives' Guide to the Cost of Capital, Salomon Brothers advised its clients that, "the most common approach to estimating the risk

premium is to calculate historical risk premiums observed over a large number of years and average them."

In a survey of corporations, financial advisors and textbook authors to identify "best practices" in cost of capital estimation, the authors said,

> Finance theory says the equity risk premium should equal the excess return expected by investors on the market portfolio relative to riskless assets. How one measures expected future returns on the market portfolio and on riskless assets are problems left to practitioners. Because the expected future returns are unobservable, all survey respondents extrapolated historical returns into the future on the presumption that past experience heavily conditions future expectations.
>
> (Robert F. Bruner, Kenneth M Eades, Robert S. Harris, and Robert C. Higgins, "Best Practices in Estimating the Cost of Capital: Survey and Synthesis", Financial Practice and Education, Spring/Summer 1998 page 20.)

Q. WHAT IS MR. KING'S OPINION OF YOUR EX ANTE ESTIMATE OF THE MARKET RISK PREMIUM?

A. Mr. King considers the forward looking ex ante estimate to be more reasonable than the ex post estimate which is based upon historical data. However, Mr. King questions my methodology for developing the ex ante estimate, claiming that the simple average of the growth and yield expectations for the S&P 500 companies is not a valid measure of the total market's earnings requirements.

Q. IS YOUR EX ANTE ESTIMATE OF THE MARKET RISK PREMIUM BASED UPON A SIMPLE AVERAGE OF GROWTH AND YIELD EXPECTATIONS FOR THE S&P 500 COMPANIES?

A. No. Mr. King's criticism is misplaced (or perhaps his reading of my testimony was incomplete). The ex ante estimate of 15.8% for the market required return from my Exhibit PCC-07 is market weighted by the market value of the companies. The market weighting is clearly noted in the exhibit.

Q. MR. KING SAYS THAT THE RATE OF RETURN ADJUSTMENT PROPOSED IN YOUR TESTIMONY WOULD "GENERATE FAR MORE REVENUE THAN ACTUAL FLOTATION COSTS THE COMPANY HAS INCURRED." IS THIS CORRECT?

A. No. The analysis on page 36 of Mr. King's testimony is very misleading due to selective interpretation of the data and a faulty calculation.

Q. PLEASE EXPLAIN.

A. Mr. King counts $55 million of stock issuance expenses from 1984 to 1994 from Exhibit PCC-10 of my direct testimony. Exhibit PCC-10 shows total stock issuance expenses of $166.7 million, and page 57 of my direct

testimony shows $92.1 million of stock issuance expenses applicable to U S WEST Communications.

Stock issuance costs are only applicable to equity financing and for this proceeding only applicable to U S WEST Communications, now Qwest Corporation, the telephone company. Mr. King's calculation takes 0.10% times the Total Liabilities and Equity from the 1999 balance sheet of U S WEST, Inc. , the parent company.

For Arizona, the equity capitalization is slightly over $1 billion ($1,015,260,000) as shown on my supplemental direct Exhibit PCC-02. The dollar difference between the market required return of 13.8% and the equity cost of 14.0% on this equity capital base is slightly over $2 million ($2,030,520).

Q. COULD STOCK ISSUANCE EXPENSES BE AMORTIZED OVER TIME AS SUGGESTED BY MR. KING?

A. Certainly. There are basically two ways for corporations to deal with stock issuance expenses – they can be expensed immediately or amortized over a short period as part of costs assigned to a specific project or use of the equity financing, or they can be recovered as an adjustment to the market required

return on equity capital. Since equity capital is continuously reinvested in telephone plant and equipment over a very long period of time, in my opinion, recovering stock issuance costs through an adjustment to the market required return is the appropriate way for Qwest and the Arizona Commission to deal with stock issuance expenses. This method also eliminates a potential problem of including stock issuance costs in some customers' rates for a relatively short period of time while future customers do not pay these equity financing costs. This would be analogous to amortizing the issuance costs for 30 year bond financing only over the first five or ten years, thus raising financing costs for current customers and lowering them for future customers. I believe that recovering stock issuance expenses through an adjustment to the market required return on equity is appropriate and proper.

Q. IS THE CAPITAL ASSET PRICING MODEL, AS MR. KING SUGGESTS, OF VALUE ONLY IN ASSESSING THE RELATIVE RISK OF DIFFERENT COMPANIES?

A. The Capital Asset Pricing Model (CAPM) is an accepted model that is widely used by investors and finance professionals for equity cost estimation, as noted in my direct testimony. The CAPM is also valuable, as Mr. King suggests, in assessing the relative risk of different companies, and particularly different industry groups. Consistent with my direct testimony at

pages 26-28 noting the dangers of reliance upon data for a single company or use of a single model, I believe the relative risk distinctions based on Beta have more validity for industry groups than for individual companies within industry groups.

Q. DO YOU HAVE DATA SHOWING THE RELATIVE RISK OF INDUSTRY GROUPS?

A. Yes. Exhibit PCC-01 shows betas for industry groups. There is a clear distinction in risk between Mr. King's electric utility group and the telephone industry group. The electric utility industry group has an average beta of .49 and the telco group has an average beta of .84.

Q. WHAT IS YOUR CONCLUSION BASED ON THIS DATA?

A. I conclude that the group of electric utilities presented in Mr. King's testimony is not comparable in risk to Qwest Corporation.

Q. WHAT ARE YOUR CONCLUSIONS RELATIVE TO MR. KING'S TESTIMONY?

A. Mr. King has underestimated the required return on equity investment for Qwest Corporation for three reasons – an error in DCF model estimates for the risk comparable telephone group, reliance upon the DCF estimate for pre-

merger U S WEST, Inc., and reliance upon an electric utility company group that is not risk comparable to Qwest.

When corrected for the Verizon dividend error, Mr. King's DCF analysis of the three largest telephone companies provides a reasonable estimate of the required equity return for Qwest – the range of 12.73% to 15.18% with a midpoint of 14.12%.

COMMENT ON THE TESTIMONY OF STEPHEN G. HILL

Q. WHAT IS MR. HILL'S ESTIMATE OF THE COST OF EQUITY CAPITAL FOR QWEST CORPORATION?

A. Mr. Hill estimates the cost of equity capital for Qwest at 11.75%. In his words, "An equity cost range of 11% to 12.50% (midpoint = 11.75%) encompasses the equity capital cost estimates of both the gas distribution sample and the telcos in that it includes the top of the range of the gas distributors (11%) and the bottom of the range of equity costs for the telcos and property/casualty insurance firms (12.50%)" (Hill Direct, page 45)

Q. IS 11.0% TO 12.5% A REASONABLE ESTIMATE RANGE?

A. No. I believe Mr. Hill has underestimated Qwest's cost of equity capital, principally by his assumption that Qwest's cost of equity range is bounded by the cost of equity for gas distribution companies at the lower end and by its peer group of large telcos at the upper end. I also believe that Mr. Hill's financial modeling techniques and inputs produce downward biased results.

Q. WHAT'S WRONG WITH ESTIMATING THE LOWER END OF QWEST'S COST OF EQUITY RANGE BY MODELING EQUITY COSTS FOR GAS DISTRIBUTION COMPANIES?

A. Qwest Corporation and other large local exchange carrier telcos are in a riskier environment than gas distribution companies. It's true that gas distribution companies have lower risk than the telcos – that fact is illustrated in my Exhibit PCC-01. Mr. Hill's gas distribution companies have an average beta of .55 and the average beta for telcos is .84.

What's wrong with Mr. Hill's assumption that the bottom of the equity cost range for Qwest equals the top of the range for the gas distributor group is that the gas distributors are not risk comparable to Qwest. Mr. Hill's assumption gives a downward bias to his cost of equity range for Qwest.

1 **Q. SIMILARLY, IS IT REASONABLE TO CONCLUDE THAT THE TOP OF THE**
2 **RANGE OF EQUITY COST FOR QWEST IS THE BOTTOM OF THE**
3 **RANGE OF EQUITY COSTS FOR THE TELCOS?**
4 A. No. Qwest Corporation is a telephone company and in the business of
5 providing local, toll, and access services in competition with other providers in
6 an industry that is experiencing consolidation and convergence of technology.
7 In order to accept Mr. Hill's recommendation, one would have to believe that
8 Qwest corporation, and specifically Qwest's operations in Arizona are
9 significantly less risky than SBC, BellSouth, Verizon, and other telcos. And,
10 one would have to accept this recommendation without the support of
11 objective data, because Mr. Hill has presented no evidence or data to support
12 his assumption that the risk, and thus the equity capital cost, for Qwest is
13 lower than the other telephone companies.
14
15 **Q. WHAT ABOUT MR. HILL'S ARGUMENT THAT THE RHCS AND GTE ARE**
16 **MORE RISKY THAN QWEST BECAUSE OF THEIR "SIGNIFICANT**
17 **DIVERSIFICATION INTO UNREGULATED, COMPETITIVE**
18 **OPERATIONS?"**
19 A. Mr. Hill's argument appears to be a gross exaggeration. Examination of
20 revenue and operating income data for the RHCs and GTE reveals that the
21 operations of these companies are very much concentrated in the provision

of local exchange telephone services and only minimally diversified into unregulated operations. The investment bank, Paine Webber, in its Incumbent Local Exchange Carrier First Quarter Review, published June 8th, 2000 shows the following sources of consolidated revenue and operating income for first quarter 2000 for the five large ILECS – Bell Atlantic, BellSouth, GTE, SBC, and U S WEST:

	Revenue	Operating Income
Domestic Wireline	75%	78%
Domestic Wireless	12%	10%
Directory	7%	12%
Other	6%	--

The Value Line Investment Survey (which Mr. Hill relies upon extensively for his testimony) categorizes 1999 revenue for these companies as follows (data from July 7, 2000 edition):

Bell Atlantic	'99 telco rev: local service 55%; access charges, 30%; toll 7%, other, 8%.
BellSouth	'99 revenues: local service, 43%; network access, 19%; wireless 22%, directory, 8%; toll, 2%; other 6%.
GTE Corp	no revenue categorization
SBC	'99 sales mix: landline local service, 39%; network access, 21%; long

	distance, 7%; wireless, 11%; directory advertising, 9%; other 13%
U S WEST	'99 revenue breakdown: local service, 59%; network access, 21%; directory services, 11%; long distance, 4%; other, 5%.

The data shows that the large ILEC telcos are very concentrated in the provision of local exchange and directory services and that their principal diversification effort is provision of domestic wireless services which are a close substitute for wireline local and toll services.

Q. IS QWEST'S COST OF EQUITY CAPITAL FOR PROVISION OF LOCAL EXCHANGE SERVICES IN ARIZONA LESS THAN THE COST OF EQUITY CAPITAL FOR OTHER LARGE TELCOS TO PROVIDE SERVICES IN THE STATES THEY SERVE?

A. No. Qwest is providing the same types of services and faces the same competitive forces as the other telcos in the other states. Regulation provides no lessened risk for Qwest nor does it provide any more favorable access to capital investment. Qwest must compete with other companies, principally other telcos, interexchange carriers, wireless providers, and CLECs for equity investment funding.

Q. WHAT IS MR. HILL'S RATIONALE FOR INCLUDING A GROUP OF INSURANCE COMPANIES IN HIS COST OF EQUITY ESTIMATE FOR QWEST?

A. Mr. Hill says that,

> My inclusion of property/casualty insurance companies in my analysis in this proceeding is designed to provide a more reliable upper bound to the cost of equity range for a local exchange telephone operation. The insurance industry is highly competitive. It is a relatively simple process to change one's insurance provider, and no one firm has a franchise operation in any locale or is a provider through which other insurance must be accessed (like local exchange service). Hill Direct, p. 18.

Q. DOES THIS RATIONALE MAKE ANY SENSE TO YOU?

A. No. It makes no sense to me. I don't see anything about the property/casualty insurance industry that makes it a "more reliable upper bound to the cost of equity range appropriate for a local exchange telephone operation." Nor have I ever seen an equity analyst or bond rating agency link telco capital costs to the insurance industry.

As for industries that are "highly competitive, relatively simple to change providers, and no one firm has a franchise operation in any locale", I could also substitute banks, grocery stores, automobile manufacturers, or credit

card providers. Mr. Hill's selection of property/casualty insurance firms appears to be completely ad hoc.

Q. HOW DOES MR. HILL ACTUALLY DERIVE HIS 11.00% TO 12.50% RANGE OF COST OF EQUITY ESTIMATES FOR QWEST?

A. It's a complicated process of picking and choosing and adjusting the summary data shown on page 44 of his testimony. He places primary reliance upon DCF estimates which average 12.71% for telcos, 12.48% for insurance companies, and 10.86% for gas distributors. After adjustments, Mr. Hill estimates a range for telcos and insurance companies of 12.5% to 13.0% and for gas distributors of 10.5% to 11.0%. His estimated range for Qwest's cost of equity is 11.0% to 12.5% with a midpoint estimate of 11.75%. As indicated above, I believe Mr. Hill's selection of gas distribution companies as the lower bound and telcos as the upper bound significantly understates Qwest's cost of equity capital. There are also methodological issues which, in my opinion, cause Mr. Hill's equity cost estimates to be unreasonably low.

Q. WHAT ARE THE METHODOLOGICAL ISSUES?

A. There are a number of ways in which Mr. Hill and I differ in our approach to estimating the cost of equity capital – it is expected that experts will differ in their use of data and models. However, there are three areas where I believe

Mr. Hill's methodology significantly departs from accepted financial theory and practice and significantly affects the cost of equity estimate. First, Mr. Hill includes the pre-merger data for U S WEST in his analysis. The vertical nature of this merger, the stock price volatility, and the announced change in dividend policy should cause the analyst to set this data aside and look to the rest of the industry to estimate capital costs. I would contrast this situation with Bell Atlantic and GTE which was a horizontal merger between two large ILECs, with the announcement of a stable dividend policy and without the drama of a foreign buyer entering the fray.

Second, Mr. Hill makes significant judgments and adjustments to the expected growth rate inputs to his DCF models, which have significant impacts on the outputs or results of those models. I address this issue in more detail later in this testimony.

Third, in his implementation of the Capital Asset Pricing Model, Mr. Hill develops a range based on a market risk premium derived from the arithmetic average of historical data and the geometric average of historical data. This is not an unequivocal issue but thorough study of the literature and surveys of practice indicate that the arithmetic average is required in cost of equity estimation.

Q. HOW WOULD MR. HILL'S RESULTS BE DIFFERENT IF PRE-MERGER U S WEST WAS EXCLUDED FROM THE ANALYSIS?

A. For the DCF analysis on Mr. Hill's Schedule 7, page 1 of 3, the average for the telcos would be 13.1% and, the standard deviation goes down to 1.07%. I was not able to exclude U S WEST from Mr. Hill's CAPM analysis because he does not provide individual company betas – only the industry beta of .81 is shown in his testimony. Using Mr. Hill's method of rounding the DCF result to the nearest ¼ percentage point, 13.0% and establishing a 50 basis point range around that equity cost estimate produces a range of equity cost estimates for the telcos of 12.75% to 13.25%.

Q. HOW DOES MR. HILL'S SELECTION OF GROWTH RATE INPUTS TO HIS DCF MODELS AFFECT THE OUTPUTS?

A. Mr. Hill's selection of growth rate inputs to his DCF models produces a significantly lower cost of equity estimate output than would be obtained by using the analysts' consensus growth rate as the input. While Mr. Hill discusses his rationale for growth rate selection at length in his testimony, the reality is that he has substituted his single personal view of expected growth for the collected growth rate analysis from a number of professional analysts.

In an article titled, "How Trustworthy is Your Valuation Model?", Daniel Rie discusses the issue of single analysts making adjustments to model inputs based upon ad hoc judgments. This article was required reading in my Chartered Financial Analyst curriculum and presented a number of significant conclusions:

> In order to adjust for model weaknesses, many analysts try to "second guess" the model by providing input estimates that lead to the desired results.
>
> Because individual judgments are subject to exactly the same kind of error biases as model predictions, overriding model predictions with *ad hoc* judgments will tend to reduce, rather than enhance, performance.
>
> Individual analysts' estimates have larger error variances than the consensus mean, even when the analyst has superior skill.
>
> There are virtually no realistic circumstances under which it would be appropriate for an organization to ignore consensus information and base valuations solely on their own analysts' expectations.
>
> (Daniel Rie, "How Trustworthy is Your Valuation Model?", Financial Analysts Journal, November/December 1985, pp. 195-201)

If Mr. Hill had used the consensus mean of analysts growth forecasts in his DCF models, his results would have shown a slightly higher cost of equity for the gas distribution companies, and a significantly higher cost of equity for the telecommunications companies and insurance companies.

Q. WHAT ARE THE DCF MODEL RESULTS USING THE CONSENSUS MEAN OF ANALYSTS' GROWTH FORECASTS?

A. I have prepared Exhibit PCC-02 which replicates Mr. Hill's Schedule 7 with his dividend yields from Schedule 6 and his analysts growth rates from Schedule 5. The results are as follows:

Company Group	DCF Cost of Equity Capital
Telecommunications	14.43%
Insurance Companies	13.82%
Gas Distribution Cos	11.24%

Q. WHAT IS THE CAPM ISSUE AROUND USE OF ARITHMETIC AND GEOMETRIC AVERAGES OF HISTORICAL RETURNS USED TO ESTIMATE THE MARKET RISK PREMIUM?

A. The issue is whether the arithmetic mean or average of past investment returns or the geometric mean or compound rate of return of past investment returns should be used going forward in estimating expected returns. The issue is technical and there is not universal agreement among finance academics and practitioners, but a thorough review of literature and financial practice indicate that the arithmetic mean of historical returns should be used

in cost of capital estimation. Mr. Hill's use of the geometric mean of historical returns in his CAPM analysis gives a downward bias to the resulting cost of equity estimate. In defense of his use of the geometric mean, Mr. Hill cites Copeland, Currin and Koller who say that, "We believe that the geometric average represents a better estimate of investors expected returns over long periods of time." In a 1998 survey of corporations, leading financial advisors, and financial texts, "Best Practices in Estimating the Cost of Capital: Survey and Synthesis", published in Financial Practice and Education, Spring/Summer 1998, Professors Bruner, Eades, Harris, and Higgins characterize the work cited by Mr. Hill as a "minority view".

Professors Brealy and Myers in the 5th edition of their Principles of Corporate Finance text provide an example to clarify the issue and demonstrate why the arithmetic average must be used in cost of capital estimation:

> The proper uses of arithmetic and compound rates of return from past investments are often misunderstood. Therefore we call a brief time-out for a clarifying example.
>
> **Example:** Suppose that the price of Big Oil's common stock is $100. There is an equal chance that at the end of the year the stock will be worth $90, $110, or $130. Therefore, the return could be -10 percent, +10 percent, or +30 percent (we assume that Big Oil does not pay a dividend). The *expected* return is 1/3 (-10 +10 +30) = +10 percent.

If we run the process in reverse and discount the expected cash flow by the expected rate of return, we obtain the value of Big Oil's stock:

$$PV = \frac{110}{1.10} = \$100$$

The expected return of 10 percent is therefore the correct rate at which to discount the expected cash flow from Big Oil's stock. It is also the opportunity cost of capital for investments which have the same degree of risk as Big Oil.

Now suppose that we observe the returns on Big Oil stock over a large number of years. If the odds are unchanged, the return will be -10 percent in a third of the years, +10 percent in a further third, and +30 percent in the remaining years. The arithmetic average of these yearly returns is:

$$\frac{-10 + 10 + 30}{3} = +10\%$$

Thus, the arithmetic average of the returns correctly measures the opportunity cost of capital for investments of similar risk to Big Oil stock.

The compound annual return on Big Oil stock is:

$$(.9 \times 1.1 \times 1.3)^{1/3} - 1 = .088, \text{ or } 8.8\%$$

less than the opportunity cost of capital. Investors would not be willing to invest in a project that offered an 8.8 percent expected return if they could get an expected return of 10 percent in the capital markets. The net present value of such a project would be:

$$NPV = 100 + \frac{108.8}{1.1} = -1.1$$

Moral: If the cost of capital is estimated from historical returns or risk premiums, use arithmetic averages, not compound annual rates of return.

(Richard A. Brealey and Stewart C. Myers, Principles of Corporate Finance, (5th Ed; New York: McGraw-Hill, Inc.; 1996, pp. 146-147.)

I have prepared Appendix I, which provides a review of the literature on this issue and a more technical explanation of the circumstances under which the arithmetic and geometric mean returns are appropriate surrogates for expected returns. The geometric mean return will always produce a biased estimate of the expected holding period return except in the unlikely circumstance in which the length of the expected holding period is equal to the length of time spanned by the historical observations, which in the data presented by Mr. Hill is 73 years (1926-1998). For expected holding periods of 5 years or less (which is indicated by stock market activity) we can confidently employ the arithmetic mean of historical risk premiums to estimate the expected equity risk premium.

Q. HOW WOULD MR. HILL'S CAPM ANALYSES BE DIFFERENT IF THE GEOMETRIC MEAN OF PAST OBSERVATIONS WAS NOT USED TO CALCULATE THE MARKET RISK PREMIUM?

A. Using the data from Mr. Hill's Schedule 8 to perform the CAPM analysis using the arithmetic mean risk premium produces the following cost of capital estimates:

Company Group	CAPM Cost of Equity Capital

Telecommunications	13.66%
Insurance Companies	14.51%
Gas Distribution Cos	11.42%

Q. HOW WOULD YOU SUMMARIZE MR. HILL'S DATA AFTER CORRECTION FOR THE THREE SIGNIFICANT METHODOLOGICAL ISSUES?

A. I would summarize the corrected model results in a table similar to that found on page 44 of Mr. Hill's testimony:

METHOD	TELCOS	INSURANCE	GAS DISTRIB.
DCF	14.43%	13.82%	11.24%
CAPM	13.66%	14.51%	11.42%

Q. HOW WOULD YOU INTERPRET THIS SUMMARY OF DATA?

A. Recognizing that this is Mr. Hill's data corrected for methodological deficiencies and not my own data and analysis, I would interpret this data as follows. The gas distribution companies are certainly of lower risk than Qwest and in a regulated, but very different industry than Qwest, and the 11% plus cost of equity estimates reflect those differences. The insurance companies are a different industry altogether and I can discern no logical relationship in their selection to either Qwest or the telecommunications industry. Therefore, I would disregard the insurance company estimates. The telcos are the most

comparable companies to Qwest and its operations in Arizona. I would use the range of DCF (14.43%) and CAPM (13.66%) estimates for the telcos as the reasonable range for the cost of equity for Qwest.

COMMENT ON THE TESTIMONY OF DR. JOHN. B. LEGLER

Q. WHAT IS DR. LEGLER'S RECOMMENDATION IN THIS PROCEEDING?

A. Dr. Legler recommends that a cost of common equity of 11.50% be adopted based on the company's proposed capital structure and embedded cost rates for debt.

Q. HOW DOES DR. LEGLER ESTIMATE THE COST OF EQUITY CAPITAL FOR QWEST TO BE 11.5%?

A. Before the data is examined, the answer to this question has to begin with Dr. Legler's statement early in his testimony that, "It is my opinion the application of finance theory can provide help and guidance in the decision process, but that the issue of a fair return is still largely judgmental." (Legler Direct, p. 3). Dr. Legler's emphasis on his exercise of judgment provides the critical linkage between the summary of financial model results shown on page 49 of his testimony and his 11.50% recommendation. In other words, without the factor of Dr. Legler's judgment, "you can't get there from here."

Dr. Legler's summary of financial model results on page 49 has cost of equity estimates that range from less than 7% to nearly 20%.

Q. DOES DR. LEGLER'S TESTIMONY INDICATE WHICH MODEL OR MODELS HE RELIED UPON MOST IN DEVELOPING HIS RECOMMENDED RANGE OF 11.0% TO 12.0%?

A. Dr. Legler states on page 50 that, "The bottom end of my recommended range is slightly above the midpoint of my CAPM results. The upper end of my recommended range is the upper end of my risk premium analysis for U S WEST." Thus it appears that Dr. Legler's recommendation relies upon his CAPM model results for U S WEST, Independent Telephones, and Bell Regional Holding Companies and his "bond yield plus risk premium method" for U S WEST.

Q. IS DR. LEGLER'S RELIANCE UPON THE CAPM AND RISK PREMIUM METHODS CONSISTENT WITH HIS TESTIMONY ON THE APPLICATION OF THESE METHODS?

A. No, it is not at all consistent. Reading through Dr. Legler's testimony and following the logic of his arguments relative to the different financial models, it

was a surprise to get to the end and find that his recommendation relies upon the very models he denigrated earlier.

Of the risk premium method, Dr. Legler says:

> At the present time, I do not believe exclusive reliance should be placed upon it for estimating the cost of equity. (Legler Direct, page 27)
>
> I believe it should be used with care and be reflective of current conditions. Therefore, it should not stand on its own but be used in conjunction with other estimating techniques. (Legler Direct, page 27)
>
> For the reasons cited earlier in my testimony, I believe that these [risk premium] calculations should be supported by other estimating techniques to be meaningful. (Legler Direct, page 34)

In contrast to his statement on page 27 that the risk premium "should be reflective of current conditions", on page 34, Dr. Legler says that "there is little support for the short-term risk premium analysis." The short-term is not reflective of current conditions?

Of the CAPM, Dr. Legler says:

> I believe that there are fairly severe problems with the required data inputs usually employed by analysts using this method which result in internal inconsistencies. For this reason for many years, I did not use this method in my testimony. Since the method is enjoying increased popularity among cost of capital witnesses, I feel compelled to comment on the use of this model and offer an estimate using the CAPM. (Legler Direct, page 35)

I find it odd that a witness with Dr. Legler's educational and professional background and experience would "feel compelled" to offer an estimate using the CAPM and then, in spite of his beliefs about "fairly severe problems with the required data inputs" would rely upon this model in his recommendation.

Q. DOES DR. LEGLER PLACE ANY RELIANCE UPON HIS DCF METHOD ESTIMATES?

A. Apparently not. On page 49 of his testimony, Dr. Legler presents DCF method cost of equity estimates which range 13.05% to 19.83% with averages ranging from 16.41% to 16.82%. His discussion of model results is silent with regard to the DCF estimates.

Q. WHAT ARE YOUR COMMENTS ON DR. LEGLER'S RISK PREMIUM STUDIES?

A. I believe Dr. Legler's risk premium studies are deeply flawed. I would not place any reliance upon those studies for cost of equity estimation for the following reasons. All of the studies relate observed bond yields to Dr. Legler's DCF generated cost of equity estimates which are based on data provided by a single source – The Value Line Investment Survey. In contrast, the more widely used source of data for estimating risk premiums, the capital

market data provided by Ibbotson Associates, uses observed bond yields and observed equity returns. For U S WEST, Dr. Legler's risk premium study begins in the third quarter of 1984 and ends in the first quarter of 1999. This is a short period of time upon which to base a risk premium. Granted, U S WEST (now Qwest) has only been a corporation since 1984, but the equity risk premium is not unique to U S WEST or any other company. Most financial analysts use the full 74 years (1926-1999) of available stock and bond return data in estimating future risk premia.

In Dr. Legler's U S WEST risk premium study, there is substantial variation in the DCF cost of equity estimates produced by his two variants of Value Line data. One method produces single digit equity cost estimates since the second quarter of 1993 and the other method shows quarter to quarter swings in cost of equity estimates from 9% to 15%. Dr. Legler did remove the negative (or near zero) risk premiums from 1994 on in this study, but the paucity of remaining data and the questionable nature of the DCF estimates would lead me to place no reliance upon the resulting risk premium estimates.

Dr. Legler's Independent company risk premium analysis has the characteristics of a "black box" model, where only the outputs, not the inputs

are visible. The data purportedly is for more than one company, but the companies are not identified, nor is there any indication in Dr. Legler's testimony on how these companies' earnings, dividends, prices, dividend yields, and growth rates are calculated or weighted. The data spans 22 years from 1978 to 1999. This is longer than his U S WEST study, but still short by historical standards. As is the case with the data for U S WEST, there is substantial variation in Dr. Legler's calculated risk premia in the recent past. For the independents, for the period 1995-1999, Dr. Legler's calculated risk premium based on retention growth is 9.93% and his calculated risk premium based on Value Line Growth is 1.07%.

Q. WHAT IS YOUR CONCLUSION ABOUT DR. LEGLER'S RISK PREMIUM MODELS?

A. I would not use the results of Dr. Legler's risk premium models to estimate the cost of equity capital for Qwest. There are too many problems with the data and the time period spanned by the models is too short.

Q. IS THERE ALTERNATIVE RISK PREMIUM DATA AVAILABLE?

A. Yes. The Ibbotson Associates publication, Stocks, Bonds, Bills & Inflation 2000 Yearbook provides market results for stock and bond returns from 1926 to 1999. This data is commonly used by analysts in risk premium models.

Exhibit PCC-09 to my supplemental direct testimony develops such a risk premium model which is used as a reasonableness check for cost of equity estimates.

This exhibit shows the difference between returns from corporate bonds and common stocks over the 74 year period from 1926 to 1999. The 7.4% difference between common stock returns and corporate bond returns is the historical equity risk premium that is commonly used to estimate the expected equity risk premium. Over a long period of time, common stock investors have realized a 7.4% greater return than corporate bond investors. This equity risk premium is substantially higher than Dr. Legler's estimates.

Simply adding the 7.4% equity risk premium to the latest Moody's bond yields (May 2000) shown in Dr. Legler's Schedule 14 would produce cost of equity estimates ranging from 15.62% to 16.26%. A more comprehensive analysis which also incorporates a forward looking, ex ante, risk premium and adjusts for the lower than market average risk for Qwest is shown in my supplemental direct testimony Exhibit PCC-09. The result of this analysis is a cost of equity range of 14.1% to 14.3%.

Q. WHAT ARE YOUR COMMENTS ON DR. LEGLER'S CAPM MODELS?

A. I find it interesting that Dr Legler advocates averaging three months of stock prices for implementation of his DCF models, but selects a current treasury bond yield to implement his CAPM model. While it does create a timing difference between his model results, I don't believe this is a serious problem. More problematic is Dr. Legler's mix of adjusted and unadjusted betas in his CAPM model. The use of different beta construction creates a wider range of results than I would expect from the CAPM. Consistent with my comments earlier about distorted market data for pre-merger U S WEST, I would not rely upon the stand alone CAPM model results for U S WEST.

Q. WHAT ARE YOUR CONCLUSIONS ABOUT DR. LEGLER'S TESTIMONY?

A. Dr. Legler presents financial model results with cost of equity estimates ranging from less than 7% to nearly 20%. From this data, Dr. Legler concludes that the cost of equity capital for Qwest is in the range of 11.0% to 12.0% and indicates that this range is close to, but not necessarily derived from the CAPM results and the risk premium analysis for U S WEST. I have pointed out deficiencies in Dr. Legler's models and noted that his extensive DCF model analysis was ignored in the final recommendation. My overall conclusion is that Dr. Legler's recommendation on the cost of equity capital for Qwest is primarily based upon his own opinion and not upon capital market data and financial models. To accept Dr. Legler's recommendation,

one would have to have more confidence in Dr. Legler's opinion than in financial models and capital market data.

CONCLUSION AND RECOMMENDATION

Q. WHAT IS YOUR RECOMMENDATION FOR A FAIR RETURN ON EQUITY FOR QWEST.

A. I believe the testimony presented by Mr. King, Dr. Legler, and Mr. Hill underestimates the cost of equity capital for Qwest Corporation. My recommended range for a fair return on equity is the range of cost of equity estimates of 13.5% to 14.5% and my specific recommendation for the Commission allowed return on equity is the midpoint of the range, 14.0%

Q. WHAT IS YOUR RECOMMENDATION FOR A FAIR OVERALL RETURN ON RATE BASE FOR QWEST?

A. Combining the fair return on book equity range and Qwest's capital structure and embedded debt cost, my recommendation for a fair overall return on rate base is the range of 10.59% to 11.12% with a midpoint recommendation of 10.86% which is calculated as follows:

	Percent	Cost	Weighted Cost
Debt	47.6%	7.39%	3.52%
Equity	52.4%	14.0%	7.34%
Overall Return			10.86%

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.

APPENDIX I

ARITHMETIC AND GEOMETRIC MEANS

When using historical risk premiums as a surrogate for the expected market risk premium, the relevant measure of the historical risk premium is the arithmetic average of annual risk premiums over a long period of time. In a sense, this is counter-intuitive because we commonly use the geometric mean of returns to measure the average annual achieved return over some period of time.

In cost of capital estimation, what we are looking for is the rate of return that investors expect -- a "target" rate of return. The actual rate of return will vary around this target rate of return. Investors are savvy enough to realize that the exact target rate of return won't be achieved in each and every year. Some years returns will exceed the target and some will fall short, but, on average, investors expect to achieve their target return.

A Non-technical Explanation

Ibbotson Associates[1] provides a good, non-technical explanation of why the arithmetic mean of historical risk premiums should be used in calculating the expected equity risk premium:

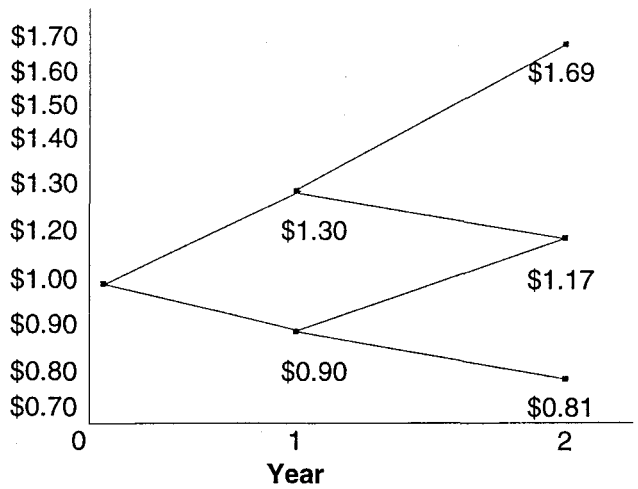
> **Arithmetic Versus Geometric Means**
> The expected equity risk premium should always be calculated using the arithmetic mean. The arithmetic mean is the rate of return which,

[1] Ibbotson Associates, Stocks, Bonds, Bills and Inflation 1995 Yearbook, Chicago, IL, 1995. pp. 150-151.

when compounded over multiple periods, gives the mean of the probability distribution of ending wealth values. (A simple example given below shows this is true.) This makes the arithmetic mean return appropriate for computing the cost of capital. The discount rate that equates expected (mean) future values with the present value of an investment is that investment's cost of capital. The logic of using the discount rate as the cost of capital is reinforced by noting that investors will discount their expected (mean) ending wealth values from an investment back to the present using the arithmetic mean, for the reason given above. They will therefore require such an expected (mean) return prospectively (that is, in the present looking toward the future) in order to commit their capital to the investment.

For example, assume a stock has an expected return of +10 percent in each year and a standard deviation of 20 percent. Assume further that only two outcomes are possible each year -- +30 percent and -10 percent (that is, the mean plus or minus one standard deviation) and that these outcomes are equally likely. (The arithmetic mean of these returns is 10 percent, and the geometric mean is 8.2 percent.) Then the growth of wealth over a two-year period occurs as shown below:

Growth of $1.00



Note that the median (middle outcome) and mode (most common outcome) are given by the geometric mean, 8.2 percent, which compounds up to 17 percent over a 2 year period (hence a terminal wealth of $1.17.) However, the expected value, or probability weighted average of all possible outcomes is equal to:

$$(.25 \quad x \quad 1.69) = 0.4225$$

+	(.50	x	1.17)	=	0.5850
+	(.25	x	0.81)	=	0.2025
TOTAL					1.2100

Now, the rate that must be compounded up to achieve a terminal wealth of $1.21 after 2 years is 10 percent; that is, the expected value of the terminal wealth is given by compounding up the arithmetic mean, not the geometric. Since the arithmetic mean equates the expected future value with the present value, it is the discount rate.

Stated another way, the arithmetic mean is correct because an investment with uncertain returns will have a higher expected ending wealth value than an investment which earns, with certainty, its compound or geometric rate of return every year. In the above example, compounding at the rate of 8.2 percent for two years yields a terminal wealth of $1.17, based on a dollar invested. But holding the uncertain investment, with a possibility of high returns (two +30 percent years in a row) as well as low returns (two -10 percent years in a row), yields a higher expected terminal wealth, $1.21. In other words, more money is gained by higher than expected returns than is lost by lower than expected returns. Therefore, in the investment markets, where returns are described by a probability distribution, the arithmetic mean is the measure that accounts for uncertainty, and is the appropriate one for estimating discount rates and the cost of capital.

A Technical Explanation

A technical explanation of why the expected equity risk premium should be calculated using the arithmetic mean begins with the common and recommended practice to utilize realized holding period returns to estimate expected returns on financial assets.[2] Further, empirical evidence suggests that realized returns on

[2] For example: "... the expected equity risk premium is unobservable in the market and must be estimated, typically by using historical data." Stocks, Bonds, Bills, and Inflation 1995 Yearbook, Ibbotson Associates, Chicago, IL, 1995, p. 147. "There are two

financial assets can be treated as random variables for purposes of estimating their expected values.[3] Consequently, a procedure is required that will produce the expected value of a random variable (the holding period return) conditioned (dependent) upon the past realizations (historic returns) of that variable. Mathematics clearly specifies the procedure which will produce an unbiased estimate of the expected future value of a random variable. The expected future

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commonly used methods for estimating the market premium: (1) the historical average approach, and (2) the growth model approach (footnote omitted). ... The most commonly used approach relies on historical data.", Michael C. Ehrhardt, The Search for Value: Measuring the Company's Cost of Capital, Harvard Business School Press, Boston MA, 1994, p. 61. "To estimate future returns, Mr. Siegel recommends using average historical returns". Lynn Asinof, "Check the Past When Investing for the Future," YOUR MONEY MATTERS: WEEKEND REPORT, The Wall Street Journal, February 11, 1994, p. C1, "Financial economists argue that the historical risk premium is our best predictor of the expected risk premium in the future (footnote omitted).", Stephen A. Ross, Randolph W. Westerfield, Jeffrey F. Jaffe, Corporate Finance, Richard D. Irwin, Inc., Homewood, IL, 1990, p. 244.

[3] A random variable is one that is independent (the value of the variable in any time period is independent of its value in other time periods) and identically distributed (the variable's probability density function is stationary, i.e. the likelihood of obtaining any observed value does not change over time).

Ibbotson Associates finds that "The serial correlation coefficient for the total return on the overall stock market less long-term government bond income returns over the 69-year period 1926 - 1994 is nearly zero, based upon yearly returns. (That is, there is no discernible pattern in the realized risk premium--implying that it is virtually impossible to forecast next year's realized risk premium on the premia in previous years.) This result is powerful evidence in favor of treating the equity risk premium as a random variable." Stocks, Bonds, Bills, and Inflation 1995 Yearbook, p. 148, footnote 16. Ross, Westerfield and Jaffe, pp. 347-348 also present evidence of statistically insignificant serial correlation for nine different stock markets. In contrast Reichenstein and Rich summarize research claiming stock returns may be partially predictable in the long term. William Reichenstein and Steven P. Rich, "Predicting Long-Horizon Stock Returns: Evidence and Implications," Financial Analysts Journal, January-February 1994, pp. 73-76. Reichenstein and Rich's article illustrates the difficulties in rejecting the hypothesis that financial asset returns are a random series. The authors note that the explanatory power of some of the variables is quite small, that the predicted relationships do not hold across all periods and that the findings are not always statistically significant.

value of a random variable is the arithmetic mean of its previously realized values.[4] The prescription to employ the arithmetic mean of past observations is unambiguous. Why then do practitioners sometimes encounter suggestions to employ the geometric mean of the historical return series rather than the arithmetic mean when estimating expected holding period returns?[5] The answer is intuitively reasonable. The arithmetic mean of past observations will only produce an unbiased estimate of future expectations if the past observations are comparable to the future expectation. More specifically, one must understand the interrelationships that exist between: (1) the number of historical returns employed to estimate the expected return, (2) the length of the holding period for which the historical returns were calculated, and (3) the length of the holding period for which the expected return is desired. Symmetry must be maintained between the lengths of historic and expected holding periods to avoid introducing bias into the expected return estimate. Therefore, while the arithmetic mean will always produce an unbiased estimate of

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[4] "The best estimate of the expected value of a variable that has behaved randomly in the past is the average (or arithmetic mean) of its past values.", Stocks, Bonds, Bills, and Inflation 1995 Yearbook, p. 148. "In statistical parlance, the arithmetic average is the unbiased measure of the expected value of repeated observations of a random variable ...", Roger A. Morin, Regulatory Finance: Utilities' Cost of Capital, 2d, Public Utilities Reports, Inc., Arlington VA, 1994, p. 276.

[5] For example: "The best estimate of a future year's return based on a random distribution of the prior years' returns is the arithmetic average. Statistically, it is our best guess for the holding-period return in a given year. If we wish to estimate the ending value of an investment over a multiyear horizon conditioned on past experience, however, we should use the geometric mean." Mark Kritzman, "What Practitioners Need to Know ... ... About Return and Risk," Financial Analysts Journal, May-June 1993 p. 15. "Therefore, if you believe that stockholders in your company engage in a buy-and-hold strategy, you should use a geometric average. If you believe that stockholders rebalance their portfolios monthly, however, you should use an arithmetic average (footnote omitted).", Ehrhardt, p. 62.

expected return, it is the nature of the interrelationships just described that dictate how the historical data must be manipulated before the arithmetic mean is calculated if estimation bias is to be avoided. The remainder of this appendix will explain the sources of bias and provide a generalized procedure for developing an unbiased estimate of the expected holding period return. During the course of the discussion it will also become apparent that in those instances where the geometric mean is the appropriate unbiased estimator of expected return, the geometric mean is effectively the arithmetic mean as well.

Blume's Analysis

Blume[6] conceptually describes and mathematically proves the biases that arise when symmetry is not maintained between the length of the historical holding periods and the length of the expected holding period. Assuming that realized returns are random variables, Blume mathematically proves that, given a finite number of T one-period return relatives[7] and a desired holding period of length N the following conditions exist with respect to developing estimates of expected returns:

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[6] Marshall E. Blume, "Unbiased Estimators of Long-Run Expected Rates of Return," Journal of American Statistical Association, September 1974, pp. 634-638.

[7] A return relative (or wealth relative) is 1 + the holding period return for the period over which the return is calculated.

1. If N = 1 the arithmetic average of the T realized return relatives is an unbiased estimate of expected return.

2. If N > 1 the arithmetic average of the T realized return relatives is an upwardly biased estimate of the expected return.

3. If N < T the geometric average of the T realized return relatives is a downwardly biased estimate of the expected return.

4. If N = T the geometric mean of the T realized return relatives is an unbiased estimate of expected return.

5. If N > T the geometric mean of the T realized return relatives is an upwardly biased estimate of the expected return.

When the length of the historic and expected holding periods are symmetric (Condition 1, N = 1) the arithmetic mean provides an unbiased estimate of the expected return. When the expected holding period is greater than 1, (Condition 2, N > 1), the arithmetic mean of the historic one-period realized returns yields an upwardly biased estimate of the expected holding period return. Conditions 3, 4, and 5 reveal that the geometric mean of the return relatives will <u>always</u> produce a biased estimate of the expected holding period return <u>except</u> in the relatively infrequent circumstance where the length of the holding period for the expected

return is equal to the length of time spanned by the historical observations employed.[8] The Ibbotson data spans 69 years and thus the geometric mean would only yield an unbiased estimate for an expected holding period of 69 years.

Generalized Unbiased Estimator

Given the probability of variation between expected and historic holding periods, it is desirable to identify a generalized unbiased estimator for expected holding period returns. Blume, Hasbrouck[9] and Cheng[10], provide several such generalized

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[8] For example, if 10 historic annual holding period returns are employed to estimate an expected 10-year holding period return, then the geometric mean is an unbiased estimator. Blume, p. 635, explains why the geometric mean is an unbiased estimator of expected return when the length of the expected holding period N is equal to the number of historical observations T, or more precisely when the length of the holding period is equal to the length of time spanned by the total number of historical observations employed.

> "If N = T, the geometric mean raised to the Nth power provides an unbiased estimator, but this is not surprising in that this estimator is merely one drawing from the distribution of N-period relatives. A single drawing from a distribution is of course an unbiased estimator of the mean."

More intuitively perhaps, recall that holding period returns are simply the mathematical result obtained from geometrically linking the single period returns that were realized during the holding period. Hence 10 historical annual returns are required to estimate the expected holding period return for a holding period of 10 years. Thus effectively only one historical observation of one ten-year holding period return is available. Of course the average of a single observation is simply the observation and thus when N=T the geometric mean of the historical observations is the same as the arithmetic mean of all possible historic holding periods.

[9] Joel Hasbrouck, "On Estimates of Long-Run Rates of Return: A Note," Journal of Financial And Quantitative Analysis, December 1983, pp. 455- 461.

[10] Pao L. Cheng, "Unbiased Estimators of Long-Run Expected Returns Revisited," Journal of Financial and Quantitative Analysis, December 1984, pp. 375-393.

unbiased estimators and test their relative efficiencies.[11] All the estimators employ the same basic procedure.[12] The difference between the estimators is the manner in which historic return observations are treated in order to preserve symmetry between historic and expected holding periods.[13] The most efficient unbiased

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[11] If two unbiased estimators are compared, the estimator with the smaller variance is preferred and deemed to be the more efficient estimator.

[12] The basic procedure employed for each estimator is a two step process. The first step is to geometrically link (multiply) N number of historic return relatives (1 + periodic return) to form an N-period wealth relative. This procedure is repeated until a sufficient number of N-period wealth relatives have been created to utilize all of the historical observed returns. The second step calculates the unbiased estimate of the expected N-period holding period return as the mean of the wealth relatives calculated in step one. Thus the unbiased estimator of the expected N-period holding period return is indeed the arithmetic mean of the historical observations as originally prescribed. The necessary symmetry between historic and expected return holding periods is accomplish by linking N number of single period historical returns where N is equal to the length of the expected holding period.

Others have proposed comparable procedures without the mathematical rigor. See for example, Russell J. Fuller, and Kent A. Hickman, "A Note on Estimating the Historical Risk Premium," Financial Practice and Education, Fall/Winter 1991, pp. 45-48. Sharpe and Alexander, p. 130 convey the same procedural approach by clearly stating that it is the arithmetic mean of holding period returns (wealth relative - 1) that yields the expected return. "Expected holding-period return is a weighted average of possible holding-period returns, using probabilities as weights (footnote omitted)."

[13] Various procedures are suggested for combining N number of historical returns into wealth relatives. One procedure is to geometrically link in chronological order the first N observed historic returns, then the next N returns and so forth until the end of the historical data is reached. When the number of historical periods T is not an integer multiple of the length of the desired holding period N then X number of historical observations are randomly discarded where X is equal to the remainder of T/N. A second suggested procedure for forming the historic holding period wealth relatives is to select N-number of historical returns from overlapping chronological periods. For example, the first wealth relative would be formed by geometrically linking observed returns 1 through N. The second wealth relative would be formed by geometrically linking observed returns 2 through N+1. N-period wealth relatives are formed in this manner until the historical return data is exhausted. Because the ending historical return observations are not utilized as many times as the beginning observations in the overlapping methodology a modification to this methodology which wraps around from the ending period to the starting period of the historical data is also proposed. By employing the wrap-around procedure all observations are used an equal number of times and estimator efficiency is increased. The wrap-around procedure is computationally equivalent to the overlapping procedure

estimator of expected return for a holding period of length N is found to be the arithmetic mean of the holding period returns formed from all possible combinations of the historical periodic returns taken N returns at a time without regard to the chronological order of the historic returns.[14] Consistent with conventional practice the N-period holding period return can be converted to a return per annum assuming periodic compounding by solving for the geometric mean of the holding period wealth relative (1 + holding period return).[15]

The combinatorial estimator avoids all of the biases described by Blume, and it reduces to the arithmetic and geometric mean in those instances where the arithmetic and geometric mean are the most efficient unbiased estimators. Consistent with Condition 1 when the length of the holding period utilized in calculating the historical returns equals the length of the expected holding period (N =1) the combinatorial estimator reduces to the simple average or arithmetic mean of

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except when a full N number of historical observations are not available before the end of the historical data is reached. In these instances a sufficient number of historic returns are selected from the beginning of the historic return series to provide the full N number of historic observations. Hasbrouck, (p. 459) observes that because the one period return relatives are independent by definition since they are assumed to be random variables, preservation of chronological order in developing N-period wealth relatives is not necessary. Consequently, Hasbrouck proposes that the maximum number of N-period wealth relatives, and hence the maximum efficiency, can be created by forming all possible combinations the historical observed returns taken N at a time without regard to their chronological sequence.

[14] The number of combinations for T observations taken N at a time is equal to

$$T! / N!(T-N)!$$

[15] See for example, Sharpe and Alexander, pp. 127-128.

the historical observations.[16] Consistent with Conditions 2 and 3, when the length of the expected holding period is greater than the period over which historic returns were calculated (N > 1), but less then the total number of historical periods employed (N < T) the combinatorial estimator is effectively a blend of the arithmetic and geometric means of the historical data. The blending effectively eliminates the upward bias of the arithmetic mean and the downward bias of the geometric mean by creating symmetry between historic and expected holding periods.[17] Finally, consistent with Condition 4 when the length of the expected holding period is equal to the number of historical observations (N = T) the combinatorial estimator reduces to the geometric mean of the historic one period returns.[18]

Blume's Unbiased Estimator

Unfortunately, the combinatorial estimator can produce huge numbers of holding period return combinations depending upon the values T and N assume. The

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[16] For example, the maximum number of 69 annual return observations taken one at a time is 69. Moreover each combination contains one distinct annual return. Consequently, the arithmetic mean of all possible combinations is also the arithmetic mean of the historical observations.

[17] The blend of the arithmetic and geometric means can be seen by examining the estimator procedure. First N-period holding period wealth relatives are calculated by geometrically linking (the geometric mean part of the blend) N-number of historic returns. The estimate of the expected holding period return is derived by taking the arithmetic mean (obviously the arithmetic mean part of the blend) of the wealth relatives.

[18] It is this aspect which explains why sources such as Kritzman, Ehrhardt, and Carleton and Lakonishok (Willard T. Carleton and Josef Lakonishok, "Risk and Return on Equity: The Use and Misuse of Historical Estimates," Financial Analysts Journal, January-February 1985, pp. 39), advise that the geometric mean is the best unbiased estimator of the expected holding period return under certain conditions.

number of holding period return combinations possible for holding periods ranging from 1 to 69 years and employing 69 years of annual return observations is provided in Exhibit 1. The actual sizes of T and N that are tractable for combinatorial estimation is dependent upon the computer resources available. However, employing the combinatorial estimator appears to be unreasonable when annual return data $T \leq 69$ years and holding period lengths $9 \leq N \leq T\text{-}9$ years.[19] Fortunately, Blume provides an unbiased estimator, which employs a weighted average of the arithmetic and geometric means of the historic data with the weights based upon the length of the expected holding period. Blume's estimator is as follows.[20]

$$\hat{E}(W_N) = \frac{T - N}{T - 1} A^N + \frac{N - 1}{T - 1} G^N$$

Where:

$\hat{E}(W_N)$ = expected N-period holding period wealth relative (1 + holding period return)

T = Number of historical periodic observations employed in the development of the arithmetic mean

[19] For example, full combinatorial estimates of expected holding period returns were developed for holding periods ranging from 1 to 7 years and employing 69 years of annual realized returns. The estimates took approximately 21 hours to compute on a Compaq 386 running at 20mhz clock speed. In contrast, the same calculations took 20 minutes on an Hewlett Packard Apollo 710. However, the calculation time jumps dramatically with each increment to the expected holding period length. The 8 year holding period took approximately 4 hours to calculate and the 9 year holding period took more than 28 hours to calculate on the same Hewlett Packard machine.

[20] Blume, pp. 636-637.

N	=	Length of holding period
A^N	=	Arithmetic mean of realized return relatives
G^N	=	Geometric mean of realized return relatives

Blume's weighted estimator provides a close approximation of the estimates obtained from the combinatorial estimator. Exhibit 2 provides the combinatorial estimated expected return and estimated expected returns generated by Blume's weighted estimator. It can be seen that the Blume's weighted estimator closely approximates the combinatorial estimator. Exhibit 2 also shows that, for holding periods of 5 years or less, the weighted estimator is very close to the arithmetic mean of annual historical observations.

To summarize:

(1) If realized holding period returns are random variables the arithmetic mean of the historical observations provides an unbiased estimate of expected holding period returns.

(2) Symmetry must be maintained between the length of the holding period utilized in calculating the historical returns and the length of the holding period for which the expected return estimate is desired.

(3) The most statistically efficient generalized procedure for ensuring symmetry is the combinatorial estimator.

(4) The combinatorial estimator reduces to the arithmetic mean of the historical observations if the length of the holding period utilized in calculation of the historical holding period returns equals the length of the holding period for which an expected return is desired.

(5) The combinatorial estimator reduces to the geometric mean of the historical return relatives when the length of the expected holding period is equal to the number of historical observations employed in the estimation.

(6) Blume's weighted combination of the arithmetic and geometric mean provides a workable approximation of the combinatorial estimator and can be confidently employed to produce unbiased expected holding period returns under all conditions without the computational burden of the combinatorial estimator.

(7) The shorter the expected holding period return, the closer the weighted combinatorial estimator is to the arithmetic mean of annual historical observations. For holding periods of 5 years or less, the

weighted combinatorial estimator is not significantly different from the arithmetic mean.

Expected Holding Period

Common stock securities have no stated maturity, and theoretically, the expected holding period for common stock investors could be indefinite. In practice, however, common stock investments are actively traded in the capital markets, indicating that investors have relatively short investment horizons or expected holding periods.[21]

Bernstein[22] observes that more than 70 percent of shares of common stock change hands each year. If 100 percent of shares changed hands each year, then the average holding period would be one year. If 50 percent of shares changed hands each year, then the average holding period would be two years. Mathematically, the average holding period is the reciprocal of the share turnover ratio:

$$AHP = 1/t$$

Where AHP = Average Holding Period

[21] "Stocks can be held almost indefinitely, and the average holding period is probably close to a year." Frank K. Reilly, Investment Analysis and Portfolio Management, 2nd Ed, Chicago, IL: The Dryden Press, 1985, p. 763.

[22] "More than 70 percent of all outstanding shares changes hands in the course of a year, up from only 20 percent or so in the 1970s." Peter L. Bernstein, Capital Ideas, New York: The Free Press, 1992, p. 4.

$$t = \text{Share Turnover}$$

$$t = \frac{\text{Shares Traded}}{\text{Shares Outstanding}}$$

The average holding period associated with the 70% turnover rate observed by Bernstein is 1.43 years [1/.70 = 1.43].

The expected holding period for common stock investors can be inferred from empirical analysis of share turnover and average holding periods. Exhibit 3 provides share turnover data for the S&P 500 stocks for 1990 to 1994 and shows that share turnover averaged 79.3% per year for an average holding period of 1.26 years. Exhibit 4 focuses on telecommunications companies and shows an average share turnover of 38.0% for an average holding period of 2.63 years.

Market trading data shows that the expected holding period for the market in general (as proxied by the S&P 500 stocks) is close to one year. For telecommunications industry stocks, the expected holding period is less than three years. As shown in Exhibit 2, both the combinatorial estimator and Blume's weighted estimator for holding periods of three years or less are not significantly different from the arithmetic mean of historical observations.

Summary

This appendix explains why the arithmetic mean of historical risk premiums should be used in calculating the expected equity risk premium. The technical explanation discusses the requirements for unbiased estimates of future expectations and examines the circumstances under which the arithmetic mean or a combination or weighting of arithmetic and geometric mean data is appropriate. The geometric mean will always produce a biased estimate of the expected holding period return except in the unlikely circumstance in which the length of the expected holding period is equal to the length of time spanned by the historical observations (in this case, 69 years). For expected holding periods of five years or less, the combinatorial or weighted estimator is not significantly different from the arithmetic mean of historical observations.

Stock market trading data indicates that the expected holding period is less than three years and the combinatorial or weighted estimator rounds to within one tenth of one percent of the arithmetic mean. Thus we can confidently employ the arithmetic mean of historical risk premiums to estimate the expected equity risk premium.

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POSSIBLE HOLDING PERIOD RETURN COMBINATIONS

Number of Historical Observations 69

LENGTH OF HOLDING PERIOD (YEARS)	COMBINATIONS
1	69
2	2,346
3	52,394
4	864,501
5	11,238,513
6	119,877,472
7	1,078,897,248
8	8,361,453,672
9	56,672,074,888
10	340,032,449,328
11	1,823,810,410,032
12	8,815,083,648,488
13	38,650,751,381,832
14	154,603,005,527,328
15	566,877,686,933,536
16	1,913,212,193,400,680
17	5,964,720,367,660,950
18	17,231,414,395,465,000
19	46,252,743,903,616,500
20	115,631,859,759,041,000
21	269,807,672,771,096,000
22	588,671,286,046,028,000
23	1,202,936,975,833,190,000
24	2,305,629,203,680,280,000
25	4,150,132,566,624,500,000
26	7,023,301,266,595,310,000
27	11,185,257,572,725,900,000
28	16,777,886,359,088,800,000
29	23,720,460,024,918,600,000
30	31,627,280,033,224,800,000
31	39,789,158,751,476,400,000
32	47,249,626,017,378,300,000
33	52,976,853,413,424,100,000
34	56,093,138,908,331,400,000
35	56,093,138,908,331,400,000
36	52,976,853,413,424,100,000
37	47,249,626,017,378,300,000
38	39,789,158,751,476,400,000
39	31,627,280,033,224,800,000
40	23,720,460,024,918,600,000
41	16,777,886,359,088,800,000
42	11,185,257,572,725,900,000
43	7,023,301,266,595,310,000
44	4,150,132,566,624,500,000
45	2,305,629,203,680,280,000

APPENDIX I
Exhibit 1

POSSIBLE HOLDING PERIOD RETURN COMBINATIONS

Number of Historical Observations 69

LENGTH OF HOLDING PERIOD (YEARS)	COMBINATIONS
46	1,202,936,975,833,190,000
47	588,671,286,046,028,000
48	269,807,672,771,096,000
49	115,631,859,759,041,000
50	46,252,743,903,616,500
51	17,231,414,395,465,000
52	5,964,720,367,660,950
53	1,913,212,193,400,680
54	566,877,686,933,536
55	154,603,005,527,328
56	38,650,751,381,832
57	8,815,083,648,488
58	1,823,810,410,032
59	340,032,449,328
60	56,672,074,888
61	8,361,453,672
62	1,078,897,248
63	119,877,472
64	11,238,513
65	864,501
66	52,394
67	2,346
68	69
69	1

COMPARISON OF THE COMBINATORIAL ESTIMATES AND BLUME'S WEIGHTED ESTIMATOR

NUMBER OF HISTORICAL OBSERVATIONS	69
ARITHMETIC MEAN OF OBSERVATIONS	0.12162
GEOMETRIC MEAN OF OBSERVATIONS	0.10194

	ESTIMATES OF EXPECTED RETURNS		
LENGTH OF HOLDING PERIOD (YEARS)	COMBINATORIAL ESTIMATOR	BLUME'S WEIGHTED ESTIMATOR	DIFFERENCE
1	0.12162	0.12162	0.00000
2	0.12135	0.12133	0.00002
3	0.12108	0.12104	0.00004
4	0.12081	0.12075	0.00006
5	0.12054	0.12046	0.00008
6	0.12027	0.12017	0.00010
7	0.12000	0.11988	0.00012
8	0.11973	0.11959	0.00014
9	0.11946	0.11930	0.00016
10	0.11919	0.11902	0.00017

S P 500 SHARE TURNOVER DATA

COMPANY	Ticker	SHARES OUTSTANDING 1994	1993	1992	1991	1990	SHARES TRADED 1994	1993	1992	1991	1990
ABBOTT LABORATORIES	ABT	803.280	821.130	836.052	425.265	429.141	283.245	327.800	311.983	151.759	178.618
ADVANCED MICRO DEVICES	AMD	95.417	92.444	88.226	84.031	82.338	263.747	303.325	304.317	262.798	111.683
AETNA LIFE & CASUALTY CO	AET	112.658	112.201	110.270	110.065	110.113	76.702	62.987	62.856	81.338	68.587
AHMANSON (H F) & CO	AHM	117.113	116.880	116.649	116.258	115.946	71.639	71.514	72.739	71.797	74.197
AIR PRODUCTS & CHEMICALS INC	APD	113.409	114.152	113.366	56.200	55.700	58.197	65.431	57.116	31.176	39.924
ALBERTO-CULVER CO -CL B	ACV	27.680	28.365	28.547	28.239	28.500	4.414	4.215	4.385	5.855	3.812
ALBERTSONS INC	ABS	253.984	253.407	132.329	132.131	133.820	92.724	133.882	52.725	64.074	45.436
ALCAN ALUMINIUM LTD	AL	224.685	224.060	223.807	223.420	222.667	122.744	93.351	71.999	102.507	146.608
ALCO STANDARD CORP	ASN	54.448	46.964	45.949	44.638	40.887	31.499	32.178	21.436	19.245	12.286
ALEXANDER & ALEXANDER	AAL	44.200	43.500	41.000	40.800	40.600	28.847	18.568	19.305	19.917	18.282
ALLERGAN INC	AGN	63.663	63.983	66.790	67.305	66.962	30.958	25.552	29.389	40.029	47.509
ALLIEDSIGNAL INC	ALD	283.132	141.917	141.883	138.150	134.688	137.270	80.845	95.083	89.250	63.969
ALUMINUM CO OF AMERICA	AA	89.356	88.361	85.730	85.082	84.842	109.969	82.489	83.706	71.446	110.111
ALZA CORP	AZA	82.043	81.614	74.855	72.082	32.390	89.363	124.029	70.546	67.269	31.007
AMDAHL CORP	AMH	116.636	114.578	113.139	111.231	110.178	80.366	83.472	102.871	72.737	77.693
AMERADA HESS CORP	AHC	92.996	92.587	92.584	81.068	81.019	59.137	57.465	72.606	51.364	61.085
AMERICAN BRANDS INC/DE	AMB	201.211	201.744	202.577	203.918	200.357	85.689	117.417	72.338	92.794	107.486
AMERICAN CYANAMID CO	ACY		89.834	90.074	91.625	93.413		67.713	61.843	75.446	86.714
AMERICAN ELECTRIC POWER	AEP	185.235	184.535	184.535	184.535	184.535	89.355	68.249	65.387	70.296	71.144
AMERICAN EXPRESS	AXP	495.866	489.828	479.976	472.166	464.474	396.298	374.012	324.728	420.346	315.301
AMERICAN GENERAL CORP	AGC	203.052	214.158	108.129	108.831	111.275	88.065	91.235	39.330	49.861	130.629
AMERICAN GREETINGS -CL A	AGREA	74.302	74.119	36.451	35.884	31.609	99.114	101.553	50.145	51.496	44.650
AMERICAN HOME PRODUCTS CORP	AHP	305.981	310.326	313.048	315.623	314.028	116.965	133.872	135.286	125.267	108.601
AMERICAN INTERNATIONAL GROUP	AIG	315.841	317.628	211.629	212.270	212.143	123.351	131.070	90.556	82.833	97.565
AMERICAN STORES CO	ASC	142.971	71.252	70.930	69.265	34.538	80.904	36.351	33.225	43.764	20.128
AMERITECH CORP	AIT	551.462	273.322	270.172	266.633	264.326	133.313	86.990	56.561	58.619	62.317
AMGEN INC	AMGN	132.328	134.214	136.321	131.864	42.220	350.214	499.953	329.466	504.994	178.109
AMOCO CORP	AN	496.393	496.401	496.303	496.335	501.964	178.200	169.251	160.115	139.653	172.206
AMP INC	AMP	104.818	104.906	104.930	106.054	105.951	58.646	53.264	55.286	48.933	63.033
AMR CORP/DE	AMR	75.900	75.800	75.400	68.000	62.300	119.157	157.056	161.221	127.715	126.977
ANDREW CORP	ANDW	25.545	16.795	8.163	9.556	9.625	46.537	34.572	13.012	9.584	9.534
ANHEUSER-BUSCH COS INC	BUD	257.290	267.037	278.402	285.052	282.306	105.959	135.552	109.236	102.088	109.314
APPLE COMPUTER INC	AAPL	119.543	116.147	118.479	118.386	115.359	510.283	504.336	367.900	513.410	396.250
ARCHER-DANIELS-MIDLAND CO	ADM	312.418	316.951	303.314	288.689	283.754	147.803	154.900	162.199	175.323	165.109
ARMCO INC	AS	105.089	104.123	103.512	88.486	88.495	61.350	80.878	54.447	49.347	54.357
ARMSTRONG WORLD INDS INC	ACK	37.277	37.222	37.128	37.103	37.092	44.154	31.992	29.643	29.109	33.146
ASARCO INC	AR	42.102	41.718	41.467	41.249	41.058	51.664	37.677	36.477	24.809	24.544
ASHLAND INC	ASH	61.000	60.022	59.948	59.879	57.803	54.781	40.419	31.324	26.804	30.817
AT&T CORP	T	1,569.006	1,352.398	1,339.831	1,309.352	1,092.143	514.170	471.191	428.910	457.365	416.450

APPENDIX I
Exhibit 3

S P 500 SHARE TURNOVER DATA

COMPANY	Ticker	SHARES OUTSTANDING 1994	1993	1992	1991	1990	SHARES TRADED 1994	1993	1992	1991	1990
ATLANTIC RICHFIELD CO	ARC	160.754	159.954	158.922	157.627	158.913	91.275	82.917	65.685	78.461	78.106
AUTODESK INC	ACAD	47.241	23.740	24.011	24.588	24.412	205.374	131.250	105.466	115.634	70.003
AUTOMATIC DATA PROCESSING	AUD	140.699	141.119	140.151	138.227	73.826	59.095	62.263	54.041	58.807	45.068
AVERY DENNISON CORP	AVY	53.550	56.194	58.874	61.253	61.981	29.239	23.197	27.045	29.297	39.258
AVON PRODUCTS	AVP	69.074	72.099	71.966	71.780	56.899	61.461	70.640	56.420	103.452	66.890
BAKER-HUGHES INC	BHI	140.889	140.437	138.624	138.396	137.457	158.660	158.456	159.779	142.118	131.612
BALL CORP	BLL	29.867	29.447	26.429	25.768	22.092	20.242	22.265	16.408	14.254	6.669
BALLY ENTMT CORP	BLY	46.991	46.876	45.986	36.448	31.015	49.084	96.769	63.222	47.306	70.329
BALTIMORE GAS & ELECTRIC	BGE	147.527	146.034	143.784	84.460	83.359	65.235	50.355	49.198	31.869	39.989
BANC ONE CORP	ONE	396.986	346.079	232.082	167.818	158.835	243.384	180.406	112.009	69.470	63.280
BANK OF BOSTON CORP	BKB	106.547	105.801	84.732	75.230	73.729	102.455	130.455	137.138	128.688	111.754
BANKAMERICA CORP	BAC	371.182	357.912	348.603	218.880	213.364	272.618	309.020	256.770	260.682	212.653
BANKERS TRUST NEW YORK CORP	BT	78.069	80.603	82.874	82.419	80.924	79.520	55.848	50.731	66.406	59.382
BARD (C.R.) INC	BCR	52.048	52.098	52.839	53.019	53.044	39.765	56.194	40.695	61.850	66.604
BARNETT BANKS INC	BBI	96.733	97.404	96.643	69.518	63.281	66.917	70.640	61.349	61.101	54.391
BARRICK GOLD CORPORATION	ABX	353.300	286.514	141.890	140.919	133.993	319.424	327.860	79.968	61.375	76.828
BASSETT FURNITURE INDS	BSET	14.087	14.448	11.535	7.678	7.715	7.837	8.980	6.884	1.520	1.929
BAUSCH & LOMB INC	BOL	58.992	59.118	59.444	59.481	29.589	77.388	46.344	36.184	38.620	22.693
BAXTER INTERNATIONAL INC	BAX	282.310	276.514	279.333	279.200	279.108	161.847	232.695	152.981	154.786	200.486
BECTON DICKINSON & CO	BDX	70.278	74.727	37.980	37.741	37.641	44.479	41.745	23.589	38.873	26.158
BELL ATLANTIC CORP	BEL	436.186	436.080	433.969	396.051	393.191	125.970	136.161	134.770	103.132	103.861
BELLSOUTH CORP	BLS	496.243	496.087	493.793	486.698	481.972	134.494	102.872	106.266	88.838	100.221
BEMIS CO	BMS	51.211	51.201	51.152	23.265	25.459	14.199	14.298	14.084	7.744	6.049
BENEFICIAL CORP	BNL	52.510	52.170	25.969	25.885	22.415	21.516	28.459	13.774	14.516	14.376
BETHLEHEM STEEL CORP	BS	109.885	91.409	90.509	76.380	75.867	162.869	160.744	83.039	76.863	58.450
BEVERLY ENTERPRISES	BEV	85.649	81.868	74.329	73.630	65.972	108.008	128.508	95.948	108.506	100.425
BIOMET INC	BMET	115.188	114.424	115.288	113.462	56.189	103.714	147.503	177.535	165.604	98.544
BLACK & DECKER CORP	BDK	84.689	83.845	83.428	61.861	61.621	84.773	73.268	114.475	84.784	78.407
BLOCK H & R INC	HRB	104.863	106.149	106.355	106.598	53.243	81.149	59.985	56.084	48.829	25.198
BLOCKBUSTER ENMNT CORP	BV		247.380	190.730	162.101	74.584		233.461	228.227	311.813	88.569
BOATMENS BANCSHARES INC	BOAT	104.322	104.126	48.278	37.977	34.691	80.875	87.102	34.932	29.535	24.708
BOEING CO	BA	340.879	340.138	339.420	341.288	343.574	207.996	240.211	291.991	319.679	317.844
BOISE CASCADE CORP	BCC	38.284	37.988	37.940	37.945	37.949	43.961	36.684	26.757	31.875	38.212
BORDEN INC	BN	169.859	141.358	140.641	147.484	147.271	196.281	166.851	84.090	80.015	67.512
BRIGGS & STRATTON	BGG	14.464	14.464	14.464	14.464	14.464	13.903	11.809	10.337	10.579	8.711
BRISTOL MYERS SQUIBB	BMY	507.286	511.906	517.984	519.517	523.819	235.998	376.576	334.116	258.154	254.734
BROWN GROUP INC	BG	17.970	17.620	17.319	17.312	17.264	7.018	7.487	7.590	7.690	8.424
BROWN-FORMAN -CL B	BF.B	68.996	22.999	27.555	27.555	27.644	13.135	5.539	5.177	4.434	5.120
BROWNING-FERRIS INDS	BFI	196.341	173.545	168.629	152.854	152.697	146.712	114.157	114.034	138.078	141.391

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COMPANY	Ticker	SHARES OUTSTANDING 1994	1993	1992	1991	1990	SHARES TRADED 1994	1993	1992	1991	1990
BRUNOS INC	3BRNO	78.090	78.047	81.890	81.768	81.589	63.380	75.011	62.996	78.293	32.561
BRUNSWICK CORP	BC	95.451	95.257	95.132	88.600	88.300	85.469	51.839	66.601	75.619	40.610
BURLINGTON NORTHRN INC	BNI	89.224	88.796	88.024	87.356	76.184	91.222	82.019	86.161	90.099	65.456
BURLINGTON RESOURCES INC	BR	126.509	129.683	128.881	131.442	137.945	80.692	96.266	79.837	87.132	89.978
CAMPBELL SOUP CO	CPB	248.000	251.700	251.168	127.004	129.269	56.354	55.663	68.082	40.701	49.523
CAPITAL CITIES/ABC INC	CCB	154.058	15.383	16.444	16.639	16.759	74.571	7.029	6.058	7.576	7.800
CAROLINA POWER & LIGHT	CPL	156.382	160.737	80.368	80.368	80.368	53.752	61.362	32.501	24.712	35.429
CATERPILLAR INC	CAT	200.442	101.862	100.952	100.912	100.906	230.806	94.968	80.140	75.698	94.114
CBS INC	CBS	61.307	15.484	13.454	13.218	23.685	80.214	15.895	15.927	12.922	14.777
CENTEX CORP	CTX	28.071	31.664	31.141	15.262	15.050	50.254	35.738	39.706	12.565	13.387
CENTRAL & SOUTH WEST CORP	CSR	190.251	188.405	188.371	94.137	94.102	86.622	67.205	70.528	33.241	48.864
CERIDIAN CORP	CEN	45.402	44.182	42.804	42.530	42.530	48.248	29.579	37.010	26.573	34.410
CHAMPION INTERNATIONAL CORP	CHA	93.294	93.026	92.880	92.920	92.968	67.670	43.769	49.685	67.287	73.912
CHARMING SHOPPES	CHRS	102.894	102.735	102.448	50.805	50.070	127.119	256.410	233.573	111.806	54.788
CHASE MANHATTAN CORP	CMB	177.174	184.290	156.096	139.858	131.694	196.099	240.067	206.789	196.070	244.722
CHEMICAL BANKING CORP	CHL	244.512	252.882	246.808	183.466	91.402	241.440	262.273	287.611	131.459	122.362
CHEVRON CORP	CHV	651.751	325.739	325.174	346.722	350.800	275.181	148.396	114.494	103.619	135.259
CHRYSLER CORP	C	355.059	353.728	295.900	292.300	224.800	571.433	563.616	427.748	194.520	162.907
CHUBB CORP	CB	86.821	87.709	87.520	86.938	81.912	57.364	57.140	62.677	55.597	71.150
CIGNA CORP	CI	72.225	72.015	71.720	71.563	71.313	53.527	41.049	37.896	40.580	46.429
CINCINNATI MILACRON INC	CMZ	33.700	33.532	27.506	27.372	27.303	20.981	32.866	15.811	16.354	10.757
CIRCUIT CITY STORES INC	CC	96.476	96.080	47.835	46.933	46.340	136.432	142.400	63.257	67.376	61.117
CISCO SYSTEMS INC	CSCO	257.697	123.708	60.111	28.519	13.386	1,111.390	607.039	276.067	180.593	41.202
CITICORP	CCI	395.081	386.490	366.489	346.250	336.513	458.222	535.207	453.486	409.699	413.568
CLARK EQUIPMENT CO	CKL	17.401	17.402	17.351	17.311	17.249	21.832	21.309	14.079	13.884	13.846
CLOROX CO/DE	CLX	53.372	54.850	54.545	54.196	54.032	22.061	26.373	28.051	25.518	24.292
CNA FINANCIAL CORP	CNA	61.798	61.798	61.798	61.793	61.793	12.817	4.757	4.707	5.344	7.667
COASTAL CORP	CGP	104.746	104.520	103.997	103.747	103.584	66.444	66.346	78.486	79.274	51.872
COCA-COLA CO	KO	1,275.933	1,297.453	1,306.771	664.480	668.239	400.966	360.695	419.914	205.805	260.725
COLGATE-PALMOLIVE CO	CL	144.404	149.257	160.240	147.343	66.604	104.682	130.569	81.206	90.618	50.122
COLUMBIA GAS SYSTEM	CG	50.563	50.559	50.559	50.559	50.472	30.372	34.403	35.757	82.755	31.772
COLUMBIA/HCA HLTHCR -VTG	COL	361.968	336.677	25.815	18.473	56.600	274.248	88.987	20.832	15.950	7.377
COMCAST CORP -CL A SPL	CMCSK	239.037	147.791	135.606	128.775	113.257	327.988	138.444	74.679	50.466	56.651
COMMONWEALTH EDISON CO	UCM1	214.191	213.751	213.305	212.677	212.285	66.583	101.389	155.118	110.253	109.690
COMMUNITY PSYCHIATRIC CNTRS	CMY	43.591	43.093	43.025	46.190	46.633	68.783	46.840	52.811	102.413	55.951
COMPAQ COMPUTER CORP	CPQ	261.037	84.348	79.829	84.202	86.090	784.406	272.171	237.967	272.652	270.231
COMPUTER ASSOCIATES INTL INC	CA	160.138	163.049	167.831	177.336	182.013	183.193	138.458	162.540	160.825	164.906
COMPUTER SCIENCES CORP	CSC	55.171	50.606	16.621	16.407	16.111	40.735	37.921	14.833	19.455	15.525
CONAGRA INC	CAG	245.698	248.195	251.710	231.963	139.674	103.937	97.907	122.886	106.190	51.462

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COMPANY	Ticker	SHARES OUTSTANDING 1994	1993	1992	1991	1990	SHARES TRADED 1994	1993	1992	1991	1990
CONRAIL INC	CRR	78.620	79.575	79.742	41.050	40.638	81.103	79.964	100.369	55.385	58.336
CONSOLIDATED EDISON OF NY	ED	234.905	234.373	233.932	228.325	228.232	100.487	69.482	79.844	98.671	83.280
CONSOLIDATED FREIGHTWAYS INC	CNF	36.354	35.702	35.329	35.090	35.001	50.111	34.266	27.197	43.851	52.594
CONSOLIDATED NATURAL GAS CO	CNG	93.028	92.934	92.557	87.322	86.327	40.515	30.046	35.803	22.771	21.835
CONTINENTAL CORP	CIC		55.331	54.926	54.653	54.388	64.069	39.470	42.275	33.131	41.041
COOPER INDUSTRIES INC	CBE	116.923	114.180	113.401	112.202	109.707	87.406	56.596	67.291	48.130	54.010
COOPER TIRE & RUBBER	CTB	83.634	83.582	83.511	41.481	41.259	51.427	95.131	48.007	24.477	34.248
COORS (ADOLPH) -CL B	ACCOB	38.327	38.199	37.727	37.482	37.384	24.164	29.486	25.873	34.807	41.330
CORESTATES FINANCIAL CORP	CFL	144.900	117.319	58.400	54.800	54.300	68.828	130.933	69.619	72.682	72.634
CORNING INC	GLW	228.200	200.636	193.898	96.783	91.855	108.716	130.469	118.994	41.653	42.591
CPC INTERNATIONAL INC	CPC	146.761	149.817	150.636	75.626	75.456	74.131	67.494	70.320	44.984	35.839
CRANE CO	CR	30.047	29.863	29.958	30.743	31.244	12.559	12.478	10.830	15.979	10.584
CRAY RESEARCH	CYR	25.470	25.980	26.047	26.592	26.163	38.272	27.983	33.738	30.041	39.278
CROWN CORK & SEAL CO INC	CCK	89.360	88.815	86.348	29.029	28.850	50.748	46.667	37.850	13.068	14.512
CSX CORP	CSX	104.722	104.143	103.476	102.378	98.540	59.165	62.078	59.414	59.904	42.067
CUMMINS ENGINE	CUM	41.600	38.500	17.219	14.842	14.836	42.017	53.076	20.636	13.405	9.580
CYPRUS AMAX MINERALS CO	CYM	92.566	91.536	47.293	39.034	38.934	98.844	74.031	50.273	30.095	27.904
DANA CORP	DCN	98.800	49.200	45.919	41.110	41.013	66.350	29.467	32.108	15.389	14.632
DATA GENERAL CORP	DGN	36.457	35.267	33.553	31.903	30.707	39.496	33.734	56.139	84.423	27.008
DAYTON HUDSON CORP	DH	71.690	71.525	71.384	71.235	71.062	76.374	67.507	74.983	68.461	64.087
DEAN WITTER DISCOVER & CO	DWD	168.900	170.600	165.675			115.808	130.332			
DEERE & CO	DE	86.421	85.502	76.321	76.235	76.107	129.003	102.972	71.797	79.574	105.685
DELTA AIR LINES INC	DAL	50.453	50.064	49.699	49.402	46.086	65.653	84.641	80.572	71.958	62.940
DELUXE CORP	DLX	82.375	82.549	83.797	83.938	84.075	44.241	41.832	26.831	32.222	24.888
DETROIT EDISON CO	DTE	144.863	147.048	147.017	146.983	146.922	86.306	66.415	57.957	54.531	73.997
DIAL CORP/DE	DL	92.789	46.018	46.907	40.145	39.257	70.133	26.625	28.642	23.508	27.310
DIGITAL EQUIPMENT	DEC	142.287	134.992	127.815	124.623	122.555	282.191	164.001	172.722	165.770	158.571
DILLARD DEPT STORES -CL A	DDS	113.046	112.992	112.522	37.191	36.954	115.699	110.005	105.744	31.948	19.333
DISNEY (WALT) COMPANY	DIS	524.100	535.500	524.400	130.200	131.800	302.424	358.429	448.683	114.981	140.210
DOMINION RESOURCES INC	D	172.405	168.123	163.843	105.901	103.193	65.951	46.648	47.915	39.210	50.185
DONNELLEY (R R) & SONS CO	DNY	153.085	154.158	155.029	77.675	77.465	53.403	51.602	45.277	27.436	26.790
DOVER CORP	DOV	56.730	57.163	57.085	58.978	59.971	22.362	17.390	17.031	24.225	25.831
DOW CHEMICAL	DOW	277.123	274.486	272.589	270.708	269.990	184.070	139.930	126.325	147.569	187.142
DOW JONES & CO INC	DJ	96.624	99.784	100.603	101.118	100.878	47.439	36.497	33.970	21.738	24.362
DRESSER INDUSTRIES INC	DI	183.852	137.613	136.927	134.304	135.574	140.246	129.255	108.827	117.338	121.936
DSC COMMUNICATIONS CORP	DIGI	113.525	55.018	44.115	41.675	40.695	594.261	331.837	157.856	116.384	132.981
DU PONT (E I) DE NEMOURS	DD	681.005	677.577	675.008	671.242	669.848	267.761	215.857	210.405	213.476	213.757
DUKE POWER CO	DUK	204.859	204.859	204.859	204.700	202.584	75.078	50.469	57.325	65.928	86.702
DUN & BRADSTREET CORP	DNB	169.761	170.282	178.235	178.450	178.622	63.293	69.422	56.606	66.869	91.115

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COMPANY	Ticker	SHARES OUTSTANDING 1994	1993	1992	1991	1990	SHARES TRADED 1994	1993	1992	1991	1990
E-SYSTEMS INC	ESY	34.071	33.885	32.892	32.417	31.205	26.208	25.955	20.138	28.023	20.269
EASTERN ENTERPRISES	EFU	20.411	20.930	22.621	22.543	22.504	10.773	13.393	13.822	11.637	12.034
EASTMAN KODAK CO	EK	339.757	330.566	325.916	324.933	324.638	271.407	390.101	220.421	227.932	248.946
EATON CORP	ETN	77.967	71.304	34.667	34.069	33.948	49.437	37.333	21.781	17.537	15.949
ECHLIN INC	ECH	59.084	58.835	56.213	55.846	55.816	52.261	42.740	50.120	33.616	28.285
ECHO BAY MINES LTD	ECO	112.682	112.213	105.169	105.146	99.117	166.522	268.976	72.337	78.686	88.763
ECOLAB INC	ECL	67.671	31.555	31.526	31.224	23.595	18.105	7.854	12.034	13.179	15.086
EG&G INC	EGG	55.124	56.132	56.813	28.248	28.088	28.933	29.953	28.424	13.281	14.887
EMERSON ELECTRIC CO	EMR	223.586	224.763	224.308	224.069	223.328	83.197	80.716	71.683	75.683	88.930
ENGELHARD CORP	EC	95.098	95.946	65.685	44.835	44.543	59.724	42.410	26.963	20.621	15.741
ENRON CORP	ENE	251.675	249.095	118.592	101.218	50.446	124.584	128.775	62.841	50.277	20.476
ENSERCH CORP	ENS	66.954	66.656	66.034	65.302	64.764	43.997	42.393	39.175	41.030	31.791
ENTERGY CORP	ETR	227.409	231.220	175.135	178.809	185.257	171.543	85.207	95.627	93.144	102.246
ETHYL CORP	EY	118.434	118.405	118.358	118.317	118.325	76.528	54.168	49.959	44.345	44.026
EXXON CORP	XON	1,242.000	1,242.000	1,242.000	1,241.977	1,245.392	302.743	275.790	260.372	278.516	294.909
FED HOME LOAN MTG CO	FRE	180.762	180.536	180.333	60.020	60.036	103.422	108.875	130.940	55.298	79.813
FEDDERS CORP	FJC	21.255	20.227	18.455	18.439	18.436	24.839	21.290	20.481	26.573	25.323
FEDERAL EXPRESS CORP	FDX	56.159	55.875	54.742	54.099	53.632	59.336	51.018	57.888	40.767	55.280
FEDERAL NATL MORTGAGE ASSN	FNM	272.802	272.450	273.288	272.988	238.272	204.116	188.287	199.807	262.663	323.558
FEDERAL PAPER BOARD CO	FBO	42.573	42.147	41.952	40.675	40.164	41.666	35.285	41.902	50.615	28.808
FIRST CHICAGO CORP	FNB	89.860	86.399	82.331	68.804	66.006	86.792	79.554	84.615	59.272	70.711
FIRST FID BANCORPORATION	FFB	80.983	79.901	74.108	70.339	59.627	38.793	45.792	33.640	30.305	43.243
FIRST INTERSTATE BNCP	I	74.203	77.326	75.185	62.783	62.181	90.529	89.683	97.840	75.520	89.764
FIRST MISSISSIPPI CORP	FRM	20.086	19.980	19.824	19.649	19.649	21.141	12.375	14.803	8.810	11.551
FIRST UNION CORP (N C)	FTU	176.034	170.338	136.052	121.064	109.173	81.457	107.650	93.295	68.017	50.219
FLEET FINANCIAL GROUP INC	FLT	135.024	137.382	123.380	120.562	110.158	122.431	95.178	59.118	66.506	63.472
FLEETWOOD ENTERPRISES	FLE	46.062	45.996	45.667	22.803	21.893	37.108	49.902	56.860	20.358	13.897
FLEMING COMPANIES INC	FLM	37.480	36.940	36.698	35.433	30.548	32.942	27.506	32.800	30.907	24.521
FLUOR CORP	FLR	82.508	82.093	81.480	81.112	80.390	88.779	57.399	58.765	94.281	76.978
FMC CORP	FMC	36.515	36.181	35.873	35.270	34.763	16.769	17.640	16.768	14.339	13.820
FORD MOTOR CO	F	1,023.000	499.000	489.500	483.300	473.100	832.457	380.893	395.745	276.260	218.590
FOSTER WHEELER CORP	FWC	35.813	35.687	35.636	35.570	35.445	36.667	27.147	24.896	34.946	32.236
FOXMEYER HEALTH CORP	FOX	16.432	12.870	19.697	20.587	21.765	9.663	11.069	7.841	15.381	17.565
FPL GROUP INC	FPL	186.571	190.066	182.788	170.756	161.065	113.332	92.131	77.515	79.537	64.061
GANNETT CO	GCI	139.767	146.967	144.402	143.753	158.991	90.183	69.586	54.787	67.427	67.248
GAP INC	GPS	144.765	145.249	144.185	142.523	70.632	191.999	144.996	194.692	133.389	78.890
GENERAL DYNAMICS CORP	GD	62.996	31.282	30.921	41.914	41.672	43.952	21.820	42.237	42.014	22.374
GENERAL ELECTRIC CO	GE	1,705.967	853.651	855.429	864.122	873.120	574.030	261.289	271.357	360.437	396.421
GENERAL MILLS INC	GIS	157.900	158.500	160.500	165.500	165.100	96.173	75.757	67.113	61.735	86.519

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COMPANY	Ticker	SHARES OUTSTANDING 1994	1993	1992	1991	1990	SHARES TRADED 1994	1993	1992	1991	1990
GENERAL MOTORS CORP	GM	754.346	720.105	706.832	620.967	605.592	702.355	586.665	537.684	363.649	294.035
GENERAL RE CORP	GRN	81.872	83.631	84.715	86.641	87.194	53.280	45.767	53.214	46.585	48.079
GENERAL SIGNAL CORP	GSX	47.100	47.343	19.748	19.341	19.262	36.195	27.881	12.920	12.151	13.945
GENESCO INC	GCO	24.344	24.304	23.169	22.845	22.675	22.346	28.222	16.170	13.349	14.112
GENUINE PARTS CO	GPC	122.627	124.282	114.577	76.279	76.357	35.394	35.278	36.281	30.484	31.143
GEORGIA-PACIFIC CORP	GP	90.466	90.269	88.111	87.421	86.704	113.801	93.539	89.187	74.306	66.869
GERBER PRODUCTS CO	GEB		69.378	72.060	37.196	37.393		51.370	58.870	21.334	29.512
GIANT FOOD INC -CL A	GFS.A	59.254	59.587	59.690	59.620	58.979	18.708	16.636	20.868	21.850	16.143
GIDDINGS & LEWIS INC/WI	GIDL	34.294	34.254	30.365	13.149	10.661	67.619	70.333	84.034	24.048	19.187
GILLETTE CO	G	221.450	220.890	220.169	219.179	97.218	104.695	137.617	112.470	156.690	93.727
GOLDEN WEST FINANCIAL CORP	GDW	58.590	63.929	63.925	63.499	63.330	29.175	31.503	28.486	37.678	41.779
GOODRICH (B F) CO	GR	25.790	25.644	25.619	25.398	25.343	19.267	22.281	32.752	22.409	20.409
GOODYEAR TIRE & RUBBER CO	GT	151.407	150.516	72.244	70.664	58.478	158.728	142.831	96.314	98.503	66.448
GRACE (W R) & CO	GRA	94.083	93.465	89.892	88.603	86.052	41.425	57.546	77.358	70.598	56.032
GRAINGER (W W) INC	GWW	50.750	50.685	52.376	52.913	27.054	25.600	23.331	23.729	26.049	11.609
GREAT ATLANTIC & PAC TEA CO	GAP	38.220	38.220	38.220	38.216	38.211	10.184	14.254	23.910	15.831	14.989
GREAT LAKES CHEMICAL CORP	GLK	67.297	71.275	71.410	35.462	35.222	67.741	45.146	48.435	21.558	19.739
GREAT WESTERN FINANCIAL	GWF	134.316	132.616	130.814	128.876	128.537	96.154	129.174	90.933	94.802	105.577
GRUMMAN CORP	GQ		34.049	33.519	33.265	32.798		22.817	11.380	14.964	14.939
GTE CORP.	GTE	965.085	951.762	939.530	888.907	669.392	357.355	292.909	287.960	298.456	242.835
HALLIBURTON CO	HAL	114.100	114.100	107.200	107.000	106.800	114.638	117.537	126.827	128.065	113.929
HANDLEMAN CO	HDL	33.533	33.411	33.218	33.276	32.976	19.706	26.362	21.479	32.800	23.329
HARCOURT GENERAL INC	H	77.887	77.307	76.292	75.160	69.589	38.958	38.388	42.385	30.317	23.203
HARLAND (JOHN H.) CO	JH	30.439	30.486	34.049	36.570	37.354	16.490	14.610	17.365	18.050	17.671
HARNISCHFEGER INDUSTRIES INC	HPH	29.946	27.950	27.966	29.993	31.696	31.003	23.481	22.596	23.847	40.689
HARRAHS ENTERTAINMENT INC	HET	102.403	102.258	33.946	33.745	26.598	183.155	177.075	31.358	35.180	27.978
HARRIS CORP	HRS	39.298	39.604	39.141	38.886	40.101	28.669	26.706	24.825	28.946	29.292
HARTMARX CORP	HMX	32.478	31.951	25.907	25.361	20.040	10.181	15.904	25.740	15.527	14.115
HASBRO INC	HAS	87.528	87.795	87.176	57.456	56.496	69.150	60.049	51.704	44.054	30.002
HEINZ (H J) CO	HNZ	243.676	249.041	254.365	254.057	259.435	113.684	99.433	112.967	114.758	74.400
HELMERICH & PAYNE	HP	24.710	24.637	24.576	24.487	24.485	12.664	15.815	12.114	17.738	17.242
HERCULES INC	HPC	38.878	40.837	43.522	46.693	46.962	34.138	31.997	33.451	37.428	27.195
HERSHEY FOODS CORP	HSY	86.735	87.613	90.186	90.186	90.186	31.521	29.341	24.384	27.273	31.025
HEWLETT-PACKARD CO	HWP	254.827	252.713	250.824	251.547	244.085	206.573	191.962	215.244	180.391	147.235
HILTON HOTELS CORP	HLT	48.100	47.800	47.700	47.500	47.500	47.986	39.705	30.135	44.589	84.057
HOME DEPOT INC	HD	453.365	449.364	332.697	211.112	118.066	288.541	381.109	280.133	195.673	138.577
HOMESTAKE MINING	HM	137.785	137.494	136.772	99.474	99.128	200.823	245.886	104.355	81.812	95.718
HONEYWELL INC	HON	127.255	131.560	136.680	69.828	70.781	81.762	92.237	82.700	53.379	92.826
HOUSEHOLD INTERNATIONAL INC	HI	96.603	94.448	41.438	39.777	35.798	64.877	57.163	26.220	36.258	39.921

S P 500 SHARE TURNOVER DATA

COMPANY	Ticker	SHARES OUTSTANDING 1994	1993	1992	1991	1990	SHARES TRADED 1994	1993	1992	1991	1990
HOUSTON INDUSTRIES INC	HOU	131.297	130.659	129.514	129.514	128.171	77.580	58.265	60.334	78.196	67.992
ILLINOIS TOOL WORKS	ITW	113.958	113.150	56.007	55.718	54.805	35.141	30.139	15.126	18.794	18.625
INCO LTD	N	117.183	110.270	109.292	106.247	104.438	104.430	59.685	48.096	49.667	62.671
INGERSOLL-RAND CO	IR	105.496	105.267	104.604	51.860	51.725	57.422	66.257	59.592	35.048	43.051
INLAND STEEL INDUSTRIES INC	IAD	44.550	41.087	35.247	30.958	30.886	51.995	33.824	24.642	22.600	24.212
INTEL CORP	INTC	413.000	418.000	209.292	203.923	199.651	1,184.140	1,462.450	545.702	550.299	471.264
INTERGRAPH CORP	INGR	44.785	45.355	47.558	47.791	47.529	39.946	41.791	67.338	114.765	81.705
INTERPUBLIC GROUP OF COS	IPG	77.704	74.851	75.062	37.713	36.738	31.362	50.149	33.192	17.164	17.799
INTL BUSINESS MACHINES CORP	IBM	587.710	581.386	571.436	571.018	571.391	602.984	579.551	510.865	439.062	402.999
INTL FLAVORS & FRAGRANCES	IFF	111.464	37.353	38.421	38.165	38.167	37.886	15.639	13.220	18.671	19.114
INTL PAPER CO	IP	125.895	123.888	122.662	112.454	109.709	131.672	105.413	115.528	110.771	97.379
ITT CORP	ITT	105.672	117.561	119.059	114.422	114.168	92.412	64.702	76.273	62.549	73.500
JAMES RIVER CORP OF VIRGINIA	JR	81.695	81.628	81.578	81.504	81.295	60.368	40.564	35.079	55.216	43.939
JEFFERSON-PILOT CORP	JP	48.451	49.464	50.439	34.195	34.523	16.917	16.130	20.399	14.025	12.494
JOHNSON & JOHNSON	JNJ	643.010	642.981	655.396	333.166	333.076	299.490	352.410	312.441	184.625	173.338
JOHNSON CONTROLS INC	JCI	40.700	40.500	40.100	39.600	39.400	23.078	18.717	19.970	19.614	19.733
JOSTENS INC	JOS	45.482	45.425	41.145	40.875	40.066	26.635	37.881	27.769	21.379	14.129
K MART CORP	KM	458.667	409.078	406.883	201.767	199.849	372.980	347.540	272.731	153.044	121.973
KAUFMAN & BROAD HOME	KBH	32.378	34.724	34.611	28.765	27.722	54.102	41.854	58.481	35.797	22.948
KELLOGG CO	K	221.701	227.920	237.318	240.463	120.658	70.380	80.243	60.763	71.151	38.562
KERR-MCGEE CORP	KMG	51.694	51.655	48.284	48.229	48.453	28.670	28.968	33.084	24.808	35.597
KIMBERLY-CLARK CORP	KMB	160.192	160.951	160.759	80.039	79.917	75.159	77.556	71.536	39.824	46.196
KING WORLD PRODUCTIONS INC	KWP	36.761	37.298	38.183	38.064	37.826	38.121	23.726	27.149	23.727	25.392
KNIGHT-RIDDER INC	KRI	52.893	54.847	54.966	53.571	49.462	31.981	29.755	24.904	25.063	18.207
KROGER CO	KR	110.997	107.647	91.452	87.667	85.577	83.284	102.018	67.656	65.234	39.022
LILLY (ELI) & CO	LLY	291.936	292.748	292.686	292.623	267.138	174.390	157.736	135.114	177.906	163.081
LIMITED INC	LTD	357.604	357.801	362.648	361.786	360.598	259.432	311.257	315.905	295.558	220.700
LINCOLN NATIONAL CORP	LNC	94.478	94.183	42.071	41.587	41.496	46.131	50.575	19.404	14.821	13.586
LITTON INDUSTRIES INC	LIT	45.914	45.520	40.455	19.829	22.380	34.754	43.263	23.864	14.023	16.071
LIZ CLAIBORNE INC	LIZ	77.004	78.847	82.782	85.232	84.950	86.704	111.684	85.675	111.743	154.789
LOCKHEED MARTIN CORP	LMT	122.147	62.696	61.100	62.763	63.198	34.255	27.188	29.503	66.292	30.201
LONGS DRUG STORES INC	LDG	20.560	20.654	20.413	20.441	20.170	7.049	5.279	6.883	7.616	4.431
LORAL CORP	LOR	84.977	83.337	41.266	31.889	25.941	55.478	64.730	30.467	32.873	22.705
LOTUS DEVELOPMENT CORP	LOTS	47.849	44.928	41.881	42.225	42.218	433.173	293.005	227.992	226.605	157.713
LOUISIANA LAND & EXPLORATION	LLX	33.380	33.173	28.348	28.287	28.203	28.651	18.397	16.237	16.427	14.965
LOUISIANA-PACIFIC CORP	LPX	111.992	110.181	54.609	35.992	35.870	103.435	133.707	61.765	31.496	27.472
LOWES COS	LOW	159.527	73.944	72.973	36.440	36.460	154.723	72.114	86.845	28.281	45.303
LUBYS CAFETERIAS INC	LUB	25.118	27.227	27.134	27.398	27.374	10.970	13.851	13.501	13.865	11.190
M/A-COM INC	MAI	25.889	25.160	23.972	24.363	24.477	16.639	23.229	13.891	12.263	13.941

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COMPANY	Ticker	SHARES OUTSTANDING 1994	1993	1992	1991	1990	SHARES TRADED 1994	1993	1992	1991	1990
MALLINCKRODT GROUP INC	MKG	77.006	76.445	75.745	25.071	22.690	69.593	72.987	80.567	20.898	19.516
MANOR CARE INC	MNR	62.524	62.450	57.490	57.372	38.114	31.587	47.389	30.110	31.558	13.887
MARRIOTT INTL INC	MAR	122.500	125.700				60.550	23.410			
MARSH & MCLENNAN COS	MMC	73.200	73.932	73.275	71.841	73.521	28.507	30.170	25.127	28.737	30.434
MARTIN MARIETTA CORP	ML		95.697	47.229	49.530	48.866	50.919	51.713	31.635	38.603	29.593
MASCO CORP	MAS	156.990	152.850	152.470	151.010	147.760	117.752	101.404	92.396	79.018	72.309
MATTEL INC	MAT	176.720	135.895	96.120	63.316	49.079	113.694	155.958	100.476	76.040	56.450
MAXUS ENERGY CORP	MXS	135.399	134.200	133.432	102.656	100.127	102.230	183.797	158.546	112.361	79.065
MAY DEPARTMENT STORES CO	MA	248.383	248.342	124.053	123.458	122.896	135.494	131.434	63.386	55.258	61.757
MAYTAG CORP	MYG	107.337	106.720	106.605	106.343	105.726	111.495	65.035	87.311	70.342	66.342
MBNA CORP	KRB	148.500	99.000	49.500	49.517		113.244	78.882	37.985	60.809	
MCCAW CELLULAR COMM -CL A	MCAWA		208.553	186.126	182.279	179.201		281.714	178.137	140.730	171.800
MCDERMOTT INTL INC	MDR	53.960	53.444	52.212	51.355	44.069	44.110	48.147	46.924	59.197	59.593
MCDONALDS CORP	MCD	693.700	353.700	363.600	358.700	359.100	390.537	170.185	195.416	242.320	219.451
MCDONNELL DOUGLAS CORP	MD	38.912	39.328	39.190	38.391	38.320	37.357	54.121	49.054	52.809	39.763
MCGRAW-HILL COMPANIES	MHP	49.672	49.413	49.134	49.045	48.927	29.232	27.569	21.942	23.904	43.392
MCI COMMUNICATIONS	MCIC	680.000	541.000	263.000	259.000	254.000	773.084	783.086	299.995	363.781	572.181
MCKESSON CORP	MCK	44.375	40.605	40.574	38.931	38.190	76.891	27.390	24.029	18.149	19.751
MEAD CORP	MEA	58.649	59.185	58.734	58.337	58.274	50.172	36.788	38.069	36.034	46.980
MEDTRONIC INC	MDT	115.509	58.129	57.820	59.431	29.766	87.900	72.920	44.691	43.660	25.304
MELLON BANK CORP	MEL	147.165	63.478	54.963	51.145	43.964	85.968	58.673	44.731	33.185	23.726
MELVILLE CORP	MES	105.642	105.346	104.733	104.212	102.936	52.061	55.188	40.409	45.265	53.244
MERCANTILE STORES CO INC	MST	36.844	36.887	36.844	36.844	36.844	36.451	11.680	11.292	10.563	10.205
MERCK & CO	MRK	1,247.826	1,253.935	1,144.695	386.510	386.991	676.416	791.366	581.033	163.500	200.714
MEREDITH CORP	MDP	13.721	14.833	15.741	16.676	18.021	6.207	7.932	5.510	6.877	7.028
MERRILL LYNCH & CO	MER	181.479	203.990	103.601	102.722	99.835	240.842	281.211	123.518	145.787	72.916
MILLIPORE CORP	MIL	23.133	28.003	27.974	27.956	27.849	26.595	24.171	22.632	18.131	16.283
MINNESOTA MINING & MFG CO	MMM	419.794	214.739	219.034	219.140	219.833	155.617	83.842	76.809	101.885	115.324
MOBIL CORP	MOB	395.987	398.168	398.816	398.301	401.079	164.666	176.780	152.951	160.441	173.110
MONSANTO CO	MTC	111.535	115.976	120.464	122.927	125.778	94.858	84.691	99.518	90.800	108.520
MOORE CORP LTD	MCL	99.570	99.524	99.469	97.744	95.814	28.999	22.280	20.650	13.048	16.598
MORGAN (J P) & CO	JPM	187.701	193.087	191.610	189.529	185.654	134.634	130.366	141.967	134.645	126.018
MORRISON KNUDSEN CORP	MRN	32.864	31.618	30.640	14.313	11.795	34.239	25.862	28.652	16.333	14.064
MORTON INTL INC	MII	49.200	48.800	48.519	48.384	48.101	39.668	35.557	28.723	33.420	31.283
MOTOROLA INC	MOT	588.000	278.600	134.850	132.200	131.700	584.932	349.897	116.533	126.392	170.098
NACCO INDUSTRIES -CL A	NC	8.952	8.941	8.935	8.882	8.878	3.504	3.011	3.474	3.481	4.184
NALCO CHEMICAL CO	NLC	67.900	68.904	70.021	69.828	34.646	38.923	37.653	34.692	40.865	19.031
NATIONAL EDUCATION CORP	NEC	29.578	29.404	29.968	29.821	29.719	17.486	19.442	18.579	22.249	20.656
NATIONAL SEMICONDUCTOR CORP	NSM	122.800	122.800	109.738	106.296	103.793	288.026	210.918	185.847	115.744	115.686

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NATIONAL SERVICE INDS INC	NSI	49.240	49.561	49.538	49.539	49.541	15.746	16.459	16.290	17.739	10.705
NATIONSBANK CORP	NB	276.452	270.905	252.990	231.246	102.861	190.038	168.653	184.826	100.545	102.499
NAVISTAR INTERNATIONL	NAV	74.354	74.701	254.098	250.117	250.023	51.123	47.395	154.539	121.194	143.622
NBD BANCORP INC	NBD	155.748	160.715	160.386	76.469	72.950	50.751	39.800	46.905	25.148	17.985
NEW YORK TIMES CO -CL A	NYT.A	98.240	106.858	79.706	78.364	77.201	51.927	53.705	32.131	27.883	33.649
NEWELL COMPANIES	NWL	157.843	78.792	78.338	62.127	59.572	87.345	52.649	53.125	30.834	30.647
NEWMONT MINING CORP	NEM	86.080	68.741	68.149	67.790	67.688	106.462	118.761	36.667	32.655	40.289
NIAGARA MOHAWK POWER	NMK	144.311	142.427	137.160	136.100	136.100	118.924	85.612	69.919	79.354	60.671
NICOR INC	GAS	51.540	53.959	27.885	28.650	28.966	18.054	23.143	12.989	14.053	17.099
NIKE INC -CL B	NKE		73.200	75.852	75.510	75.296	69.470	93.432	68.551	108.452	225.550
NL INDUSTRIES	NL	51.052	50.890	50.890	51.201	64.135	20.675	9.767	9.664	11.097	11.953
NORAM ENERGY CORP	NAE	122.530	122.362	122.258	116.488	115.137	63.296	79.764	135.395	89.609	55.104
NORDSTROM INC	NOBE	82.244	82.059	81.975	81.844	81.738	151.008	128.214	114.892	121.925	131.447
NORFOLK SOUTHERN CORP	NSC	133.133	138.495	140.316	142.936	155.579	53.054	47.140	49.733	56.093	66.093
NORTHERN STATES POWER/MN	NSP	66.922	66.880	62.598	62.541	62.541	24.726	20.308	21.168	22.523	21.651
NORTHERN TELECOM LTD	NT	253.354	251.266	248.414	245.619	243.516	89.022	103.544	55.690	40.313	59.266
NORTHROP GRUMMAN CORP	NOC	49.242	48.913	47.398	47.090	46.938	32.933	26.573	17.482	34.020	35.427
NORWEST CORP	NOB	309.145	292.175	144.375	130.163	119.878	149.167	158.211	60.515	65.247	47.153
NOVELL INC	NOVL	364.355	308.051	300.635	143.986	70.411	836.352	835.676	690.961	376.848	268.008
NUCOR CORP	NUE	87.333	87.073	43.368	21.604	21.488	57.331	50.999	20.524	11.630	10.758
NYNEX CORP	NYN	423.597	414.885	206.824	203.724	200.096	153.105	141.789	62.521	62.370	82.370
OCCIDENTAL PETROLEUM CORP	OXY	316.853	305.603	303.728	300.063	296.360	199.531	196.151	166.132	203.207	179.433
OGDEN CORP	OG	48.777	43.499	43.190	42.994	42.878	22.999	27.878	30.471	26.440	29.079
OHIO EDISON CO	OEC	152.569	152.569	152.569	152.569	152.569	56.593	43.479	46.558	60.909	76.125
ONEOK INC	OKE	26.690	26.634	26.629	26.621	26.627	11.118	12.711	13.958	14.005	12.460
ORACLE CORP	ORCL	433.357	286.361	142.228	139.897	136.297	848.348	800.407	343.861	340.634	406.023
ORYX ENERGY CO	ORX	98.946	96.932	96.917	79.667	79.654	85.045	91.532	71.849	43.505	36.841
OSHKOSH B'GOSH INC -CL A	GOSHA	13.502	14.586	14.586	14.586	14.586	15.505	12.608	12.665	19.314	22.024
OUTBOARD MARINE CORP	OM	20.000	19.800	19.500	19.400	19.500	23.747	20.079	21.867	21.666	14.529
OWENS CORNING FIBRGLAS	OCF	44.200	43.200	42.500	41.652	40.581	60.961	40.654	59.246	56.532	23.579
PACCAR INC	PCAR	38.859	33.789	33.822	33.822	33.807	25.420	20.691	25.285	21.816	16.453
PACIFIC ENTERPRISES	PET	84.532	84.194	75.290	73.017	70.699	37.333	45.805	49.880	34.534	19.774
PACIFIC GAS & ELECTRIC	PCG	430.243	427.219	426.846	417.572	420.219	172.091	139.100	105.763	104.637	127.354
PACIFIC TELESIS GROUP	PAC	424.065	423.059	405.092	401.018	399.459	202.877	181.813	128.073	112.334	121.710
PACIFICORP	PPW	284.251	281.021	270.579	262.096	252.832	99.695	112.713	103.179	71.868	75.652
PALL CORP	PLL	115.319	116.063	86.708	58.420	38.648	68.780	56.730	44.354	36.763	19.656
PANHANDLE EASTERN CORP	PEL	149.100	120.000	108.300	108.200	90.800	74.062	66.706	71.434	73.215	106.535
PARKER-HANNIFIN CORP	PH	48.940	48.601	48.409	48.205	48.918	38.201	29.151	24.926	23.267	24.437
PECO ENERGY CO	PE	221.609	221.516	220.534	220.030	216.953	107.612	95.839	104.524	89.210	113.172

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COMPANY	Ticker	SHARES OUTSTANDING 1994	1993	1992	1991	1990	SHARES TRADED 1994	1993	1992	1991	1990
PENNEY (J C) CO	JCP	227.441	236.086	117.389	116.651	116.561	159.671	161.511	86.927	65.648	76.195
PENNZOIL CO	PZL	46.127	45.910	40.716	40.461	40.241	27.617	31.306	22.564	17.456	19.328
PEOPLES ENERGY CORP	PGL	34.868	34.823	34.774	32.762	32.701	9.762	9.599	10.636	8.813	9.008
PEP BOYS-MANNY MOE & JACK	PBY	59.269	60.112	60.669	55.774	55.606	48.960	49.082	69.537	64.741	45.176
PEPSICO INC	PEP	789.900	798.781	798.800	789.100	788.400	418.825	371.480	310.986	489.256	438.485
PERKIN-ELMER CORP	PKN	42.949	43.944	33.636	33.547	33.230	29.622	30.329	25.401	27.206	27.393
PET INC	PT.	100.751	104.621	107.527	106.903	0.000	88.795	80.783	65.182	63.031	
PFIZER INC	PFE	314.226	320.922	325.141	329.647	165.122	213.864	289.060	215.168	212.617	153.403
PHELPS DODGE CORP	PD	70.672	70.531	70.374	34.811	34.441	100.162	116.490	102.352	47.300	55.940
PHILIP MORRIS COS INC	MO	852.859	877.091	892.757	919.851	926.219	576.271	722.731	472.429	497.940	524.536
PHILLIPS PETROLEUM CO	P	261.639	261.481	260.231	259.781	258.720	140.775	153.844	130.380	121.571	144.274
PIONEER HI-BRED INTERNATIONL	PHYB	86.214	89.442	90.274	30.220	30.924	74.458	72.467	57.920	17.548	19.930
PITNEY BOWES INC	PBI	151.276	158.174	157.175	79.382	78.689	84.561	61.117	59.356	36.762	47.093
PITTSTON CO-SERVICES GROUP	PZS	41.595	41.429		37.317	37.278	30.980	24.241		36.484	27.928
PLACER DOME INC	PDG	238.449	238.102	237.116	236.736	236.395	230.325	250.054	98.076	101.383	129.015
PNC BANK CORP	PNC	233.249	234.705	232.573	107.412	95.549	113.164	83.432	85.253	47.823	39.683
POLAROID CORP	PRD	45.998	46.806	46.668	48.919	50.070	26.926	36.906	49.927	42.031	42.572
POTLATCH CORP	PCH	29.224	29.199	29.144	29.033	28.971	11.564	11.600	8.937	16.850	11.335
PPG INDUSTRIES INC	PPG	206.988	106.841	106.135	106.170	106.040	90.393	38.453	46.137	44.176	40.738
PRAXAIR INC	PX	137.863	134.450	131.060			115.059	102.891	71.937		
PREMARK INTERNATIONAL INC	PMI	63.898	31.907	31.807	31.127	30.722	53.077	26.910	35.518	23.350	19.805
PRICE/COSTCO INC	PCCW	217.795	217.074	216.020			303.343	60.449			
PROCTER & GAMBLE CO	PG	684.348	681.754	678.794	338.089	346.294	195.798	220.821	204.194	151.722	153.972
PROVIDIAN CORP	PVN	97.536	101.426	47.401	46.353	44.783	49.153	47.387	24.294	27.494	26.745
PSI RESOURCES INC	CIN2		57.040	55.308	54.731	54.441	28.696	70.495	43.335	44.549	32.028
PUBLIC SERVICE ENTRP	PEG	244.698	243.688	235.396	226.701	218.472	89.732	102.154	99.735	85.510	67.393
PULTE CORP	PHM	27.453	27.547	27.432	24.755	23.528	20.679	22.842	32.536	12.070	11.149
QUAKER OATS CO	OAT	66.804	69.456	73.403	76.329	75.587	89.456	50.732	54.254	41.347	46.629
RALSTON PURINA GROUP	RAL	100.031	101.763		110.500	55.673	44.887	20.536		41.522	30.071
RAYCHEM CORP	RYC	43.006	41.875	40.242	38.241	36.424	25.577	30.746	23.594	25.490	34.911
RAYTHEON CO	RTN	123.322	135.214	135.660	66.720	65.355	72.756	59.525	61.631	51.787	50.435
REEBOK INTERNATIONAL LTD	RBK	80.945	83.691	89.363	90.974	114.428	56.841	90.920	114.768	119.320	90.345
REYNOLDS METALS CO	RLM	62.169	60.489	59.760	59.607	59.494	54.916	59.120	55.513	51.174	67.957
RITE AID CORP	RAD	84.165	86.011	88.040	87.814	41.526	86.177	56.794	46.432	65.048	21.334
ROADWAY SERVICES INC	ROAD	39.419	39.369	39.733	39.192	38.605	48.355	46.125	49.792	36.051	24.621
ROCKWELL INTL CORP	ROK	218.600	221.000	220.300	228.200	238.900	79.833	78.127	72.227	66.703	77.536
ROHM & HAAS CO	ROH	67.692	67.645	67.564	64.156	63.981	30.996	26.487	26.477	18.692	16.425
ROLLINS ENVIRONMENTAL SVCS	REN	60.376	60.350	60.287	60.192	60.144	33.259	56.481	52.610	56.129	44.702
ROWAN COS INC	RDC	84.280	83.892	73.187	72.869	72.629	75.438	74.106	77.213	83.586	70.299

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COMPANY	Ticker	SHARES OUTSTANDING 1994	1993	1992	1991	1990	SHARES TRADED 1994	1993	1992	1991	1990
ROYAL DUTCH PET -NY REG	RD	536.074	536.074	536.074	536.074	536.074	140.705	343.461	184.217	154.178	135.321
RUBBERMAID INC	RBD	160.801	160.357	160.239	160.189	79.993	82.877	60.618	56.632	49.280	24.741
RUSSELL CORP	RML	39.689	40.405	40.810	40.569	40.407	15.737	17.161	16.716	16.040	14.464
RYAN'S FAMILY STK HOUSES INC	RYAN	53.434	53.415	53.337	52.861	52.637	50.834	78.069	97.197	88.526	64.658
RYDER SYSTEM INC	R	78.761	77.294	75.412	73.691	73.656	54.035	57.544	53.543	50.309	57.428
SAFECO CORP	SAFC	62.952	62.932	62.815	62.748	62.722	67.424	63.263	47.609	48.020	49.652
SAFETY-KLEEN CORP	SK	57.755	57.684	57.668	56.949	37.816	42.466	49.578	31.493	39.370	22.006
SALOMON INC	SB	105.848	110.561	109.801	113.158	109.935	84.377	72.005	80.241	166.593	83.016
SANTA FE ENERGY RESOURCES	SFR	90.000	89.800	89.500	64.100	63.800	31.371	39.450	44.231	29.064	16.660
SANTA FE PACIFIC CORP	SFX	188.301	185.611	181.827	179.812	172.970	204.658	141.383	130.881	104.908	72.580
SARA LEE CORP	SLE	480.765	485.378	239.862	232.684	230.339	242.918	197.696	80.388	94.519	134.233
SBC COMMUNICATIONS INC	SBC	609.082	600.234	299.873	300.158	299.869	185.578	161.593	88.551	91.590	93.292
SCECORP	SCE	447.799	447.799	223.868	219.953	218.474	249.349	188.408	66.582	68.790	70.052
SCHERING-PLOUGH	SGP	186.014	193.555	199.517	201.789	222.025	137.702	161.641	143.153	183.824	125.612
SCHLUMBERGER LTD	SLB	242.232	243.549	241.834	239.962	238.125	134.805	149.688	148.623	146.786	153.902
SCIENTIFIC-ATLANTA INC	SFA	37.747	37.196	23.097	22.704	22.452	60.714	66.557	32.760	23.235	24.860
SCOTT PAPER CO	SPP	75.595	74.030	73.910	73.743	73.638	107.799	56.068	49.624	49.001	49.727
SEAGRAM CO LTD	VO	372.537	372.489	373.690	94.870	93.743	101.167	92.222	71.487	22.610	29.510
SEARS ROEBUCK & CO	S	351.740	350.848	345.844	344.096	343.085	235.169	251.118	198.468	163.493	157.427
SERVICE CORP INTERNATIONAL	SRV	94.857	84.859	76.905	50.654	45.867	46.827	56.875	49.927	38.904	33.261
SHARED MEDICAL SYSTEMS CORP	SMED	22.943	22.753	22.566	22.454	22.419	39.264	30.858	29.035	40.232	23.343
SHAWMUT NATIONAL CORP	SNC	120.771	95.440	92.528	73.765	73.678	130.536	110.895	97.344	100.062	53.344
SHERWIN-WILLIAMS CO	SHW	84.826	88.506	88.381	87.643	43.369	43.427	37.434	39.529	47.160	23.109
SHONEY'S INC	SHN	41.185	40.725	38.845	39.975	38.251	44.831	46.886	44.966	26.583	21.190
SKYLINE CORP	SKY	11.121	11.157	11.217	11.217	11.217	6.407	8.423	7.833	5.576	5.934
SNAP-ON INC	SNA	42.878	42.569	42.415	42.211	41.277	25.342	19.894	20.885	20.790	17.767
SONAT INC	SNT	86.381	87.158	43.038	42.939	42.874	64.188	72.033	29.767	30.427	27.364
SOUTHERN CO	SO	656.528	321.331	316.458	315.654	315.654	207.207	86.962	94.143	112.058	117.998
SPRINGS INDUSTRIES -CL A	SMI	17.595	17.582	17.571	17.564	17.501	6.477	7.128	7.405	6.650	6.639
SPRINT CORP	FON	348.300	343.400	220.659	218.163	214.935	222.028	187.477	135.276	140.942	193.720
SPX CORP	SPW	14.015	13.923	13.903	13.837	13.825	6.492	6.075	8.541	8.032	7.648
ST JUDE MEDICAL INC	STJM	46.479	46.414	47.518	47.355	47.045	86.065	114.171	136.558	106.407	115.874
ST PAUL COS	SPC	84.202	42.357	42.059	42.521	42.234	50.571	22.356	22.815	41.315	52.506
STANLEY WORKS	SWK	44.449	44.696	45.439	45.241	41.176	13.124	14.254	17.332	15.521	12.160
STONE CONTAINER CORP	STO	90.396	71.175	70.993	69.466	60.025	166.082	132.972	102.338	96.041	42.896
STRIDE RITE CORP	SRR	49.518	50.280	50.908	25.740	25.429	41.788	52.537	68.517	25.369	31.822
SUN CO INC	SUN	106.938	106.683	106.413	106.098	106.188	60.574	49.084	35.049	30.730	29.524
SUN MICROSYSTEMS INC	SUNW	93.851	102.112	100.002	96.360	92.613	366.591	404.077	384.363	395.485	361.043
SUNTRUST BANKS INC	STI	115.679	122.468	124.858	127.825	126.783	29.859	33.570	28.964	36.576	35.064

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COMPANY	Ticker	SHARES OUTSTANDING 1994	1993	1992	1991	1990	SHARES TRADED 1994	1993	1992	1991	1990
SUPERVALU INC	SVU	70.174	72.059	71.655	71.864	75.225	50.337	38.838	36.080	38.992	33.095
SYNTEX CORP	SYN		221.000	225.700	225.100	112.100	230.075	212.703	274.991	210.711	109.853
SYSCO CORP	SYY	183.069	184.458	185.776	92.600	91.754	92.069	82.245	84.666	45.634	43.901
TANDEM COMPUTERS INC	TDM	115.537	112.966	110.451	107.499	105.038	143.897	126.694	102.018	112.682	149.568
TANDY CORP	TAN	58.257	63.956	63.189	78.395	79.132	70.966	73.050	69.362	50.061	56.984
TEKTRONIX INC	TEK	31.439	30.270	30.483	29.610	29.247	34.954	19.892	24.509	33.342	23.121
TELE-COMM -SER A TCI GRP	TCOMA	576.063	449.761	430.096	418.580	357.949	658.364	702.207	443.852	296.206	350.022
TELEDYNE INC	TDY	55.462	55.439	55.413	55.413	55.413	29.631	28.684	27.685	26.316	19.446
TEMPLE-INLAND INC	TIN	56.019	55.481	55.251	54.914	54.589	35.949	35.228	32.356	30.600	25.446
TENET HEALTHCARE CORP	THC	199.938	166.081	165.899	166.963	87.382	210.109	225.976	167.676	183.190	74.595
TENNECO INC	TEN	187.717	169.786	144.976	123.841	121.985	134.749	118.732	87.995	125.739	91.422
TEXACO INC	TX	259.532	259.020	258.748	258.493	258.161	141.831	166.989	159.101	146.525	188.600
TEXAS INSTRUMENTS INC	TXN	92.683	90.817	82.599	82.134	81.778	199.669	178.725	99.875	100.807	98.588
TEXAS UTILITIES CO	TXU	225.841	224.345	217.316	210.700	196.970	130.032	132.008	149.963	136.147	206.634
TEXTRON INC	TXT	85.497	88.413	87.563	86.088	84.777	39.521	40.952	35.099	39.703	36.163
THOMAS & BETTS CORP	TNB	19.605	18.873	18.763	17.081	17.002	10.012	9.011	8.389	7.942	6.829
TIME WARNER INC	TWX	379.300	378.300	372.000	92.600	57.500	253.493	269.942	285.155	90.182	51.978
TIMES MIRROR COMPANY -SER A	TMC	128.618	128.609	128.573	128.519	128.484	56.763	44.057	30.378	31.993	37.190
TIMKEN CO	TKR	31.061	30.626	30.518	29.894	29.346	15.147	13.706	11.320	13.372	13.557
TJX COMPANIES INC	TJX	72.401	73.431	73.222	69.803	69.723	100.036	83.576	64.388	56.892	45.095
TORCHMARK CORP	TMK	71.534	72.895	73.512	50.763	51.315	33.679	28.701	28.065	15.716	17.620
TOYS R US INC	TOY	279.790	289.522	293.068	289.297	287.657	193.047	175.253	190.106	204.095	221.237
TRANSAMERICA CORP	TA	69.395	76.399	79.171	77.203	76.352	26.232	29.602	25.636	34.147	26.601
TRANSCO ENERGY CO	E	40.917	41.372	40.297	30.701	30.584	27.001	26.432	44.176	36.564	19.343
TRAVELERS GROUP INC	TRV	316.511	327.132	110.979	108.626	108.274	198.425	200.341	65.108	77.154	83.862
TRIBUNE CO	TRB	66.701	66.981	65.479	64.532	64.158	41.806	30.631	23.323	25.601	29.205
TRINOVA CORP	TNV	28.796	28.406	28.238	28.226	28.219	19.153	17.670	18.610	20.200	20.651
TRW INC	TRW	64.500	63.800	62.800	61.200	59.800	30.622	38.309	29.122	23.741	26.481
TYCO INTL INC	TYC	46.351	46.322	47.005	47.053		41.446	22.749	24.508	40.120	30.512
U S BANCORP	USBC	98.138	99.476	99.068	98.194	60.332	97.929	66.224	69.966	123.638	69.540
U S SURGICAL CORP	USS	56.836	56.258	55.628	52.387	24.363	182.753	181.676	146.366	80.234	29.709
U S WEST INC	USW	469.343	441.140	414.462	409.936	393.493	193.206	165.130	108.728	117.640	115.005
UAL CORP	UAL	12.439	24.569	24.238	23.758	21.885	34.216	58.460	52.584	48.524	74.872
UNILEVER N V -NY SHARES	UN	160.041	160.041	160.041	160.041	160.041	31.716	86.988	59.512	58.399	44.212
UNION CAMP CORP	UCC	70.012	69.833	69.664	69.461	67.420	38.004	41.028	49.031	46.334	38.755
UNION CARBIDE CORP	UK	144.412	150.547	132.865	127.607	125.674	182.251	173.201	192.809	106.160	151.873
UNION ELECTRIC CO	UEP	102.124	102.124	102.124	102.124	102.124	40.300	33.501	40.109	44.854	33.380
UNION PACIFIC CORP	UNP	205.937	205.161	203.895	202.844	100.129	108.221	79.882	79.335	94.176	50.559
UNISYS CORP	UIS	170.962	170.365	161.931	161.691	161.770	259.708	244.112	346.106	198.958	197.588

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COMPANY	Ticker	SHARES OUTSTANDING 1994	1993	1992	1991	1990	SHARES TRADED 1994	1993	1992	1991	1990
UNITED TECHNOLOGIES CORP	UTX	123.136	126.047	123.775	121.898	121.156	87.509	80.203	88.181	93.075	78.795
UNOCAL CORP	UCL	244.199	241.324	240.671	234.605	234.507	137.746	182.795	183.134	159.371	151.696
UPJOHN CO	UPJ	173.142	173.432	174.581	175.215	176.408	130.747	125.694	171.354	222.394	185.212
USAIR GROUP	U	61.088	59.216	47.217	46.646	45.528	130.692	148.809	88.730	85.212	59.028
USF&G CORP	FG	95.616	85.009	84.513	84.273	83.958	73.667	83.364	96.088	101.678	81.239
USLIFE CORP	USH	22.817	22.658	22.502	15.017	15.358	9.533	11.619	12.719	8.167	9.249
UST INC	UST	196.110	204.757	211.037	105.490	106.491	101.149	135.273	79.723	41.566	43.851
USX-MARATHON GROUP	MRO	287.186	286.582	286.563	258.218	269.555	134.442	129.946	209.561	159.878	
USX-U S STEEL GROUP	X	75.970	70.329	59.743	51.022	53.911	105.550	100.813	56.013	53.750	
VARITY CORP	VAT	41.661	43.957	30.999	24.988	249.301	49.468	62.948	26.807	16.191	161.969
VF CORP	VFC	64.165	64.489	59.519	57.700	57.013	34.091	64.646	35.141	30.057	31.198
WACHOVIA CORP	WB	170.934	171.376	85.736	85.323	69.679	54.043	62.819	16.540	22.229	17.324
WAL-MART STORES	WMT	2,297.000	2,298.769	1,149.819	1,149.028	1,142.282	661.258	833.476	290.720	334.669	390.085
WALGREEN CO	WAG	123.071	123.071	123.071	123.071	61.524	66.078	52.158	47.401	60.189	29.668
WARNER-LAMBERT CO	WLA	134.596	134.140	135.340	134.594	134.341	100.991	113.763	103.158	119.958	90.416
WELLS FARGO & CO	WFC	51.252	55.813	55.191	52.002	51.438	45.971	68.225	88.329	88.736	76.249
WENDY'S INTERNATIONAL INC	WEN	101.758	100.794	98.826	97.381	96.821	80.764	95.364	103.895	128.563	85.280
WESTINGHOUSE ELECTRIC CORP	WX	356.792	352.176	346.442	339.236	290.108	266.850	275.603	279.074	310.307	176.868
WESTVACO CORP	W	67.167	66.886	66.401	65.819	65.291	30.172	21.300	18.190	21.362	18.098
WEYERHAEUSER CO	WY	205.618	205.089	204.277	202.259	201.134	134.294	170.180	126.391	114.048	85.867
WHIRLPOOL CORP	WHR	73.845	73.068	70.027	69.640	69.465	66.983	62.942	50.217	47.973	37.798
WHITMAN CORP	WH	105.032	107.091	107.109	106.837	102.973	39.836	42.714	40.515	66.316	65.453
WILLIAMS COS INC	WMB	90.885	103.079	46.144	41.754	41.361	131.326	102.495	48.350	29.277	36.307
WINN-DIXIE STORES INC	WIN	74.176	74.956	76.851	77.129	39.157	12.543	16.494	13.140	10.822	7.007
WMX TECHNOLOGIES INC	WMX	496.387	483.453	490.177	493.621	488.665	324.135	344.282	264.278	290.907	271.928
WOOLWORTH CORP	Z	132.505	131.923	131.303	130.342	129.665	158.936	120.327	95.388	105.647	99.884
WORTHINGTON INDUSTRIES	WTHG	90.840	90.561	60.076	59.539	39.423	44.620	54.064	31.713	41.304	19.128
WRIGLEY (WM) JR CO	WWY	116.209	116.400	116.834	39.139	39.169	32.353	28.934	25.154	6.930	6.031
XEROX CORP	XRX	105.993	104.122	95.066	92.846	92.231	84.479	87.040	62.761	79.545	70.084
YELLOW CORP	YELL	28.106	28.100	28.102	28.086	28.089	54.999	41.895	30.801	37.299	31.757
ZENITH ELECTRONICS CORP	ZE	45.677	35.889	30.263	29.145	27.716	91.406	36.028	32.196	20.208	25.465
ZURN INDUSTRIES INC	ZRN	12.340	12.404	12.431	12.564	12.400	7.907	9.333	8.252	9.880	10.201
TOTAL		82,254.663	77,227.860	69,737.047	61,533.020	58,015.329	58,370.066	55,057.988	44,304.306	40,206.406	37,122.024

APPENDIX I
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S P 500 SHARE TURNOVER DATA

COMPANY	Ticker	SHARES OUTSTANDING 1994	1993	1992	1991	1990	SHARES TRADED 1994	1993	1992	1991	1990
SUMMARY STATISTICS											
COUNT		490	500	497	496	494	495	500	495	496	492
SUM		82,254.663	77,227.860	69,737.047	61,533.020	58,015.329	58,370.066	55,057.988	44,304.306	40,206.406	37,122.024
MINIMUM		8.952	8.941	8.163	7.678	0.000	3.504	3.011	3.474	1.520	1.929
MAXIMUM		2,297.000	2,298.769	1,339.831	1,309.352	1,245.392	1,184.140	1,462.450	690.961	550.299	572.181
AVERAGE		167.867	154.456	140.316	124.059	117.440	117.919	110.116	89.504	81.061	75.451
MEDIAN		97.135	92.516	84.513	75.195	69.634	72.756	65.233	57.888	50.388	46.529
STD		222.591	200.006	175.512	154.266	148.919	148.301	141.546	98.538	88.223	83.801

APPENDIX I
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S P 500 SHARE TURNOVER DATA

COMPANY	Ticker	SHARE TURNOVER 1994	1993	1992	1991	1990
ABBOTT LABORATORIES	ABT	0.353	0.399	0.373	0.357	0.416
ADVANCED MICRO DEVICES	AMD	2.764	3.281	3.449	3.127	1.356
AETNA LIFE & CASUALTY CO	AET	0.681	0.561	0.570	0.739	0.623
AHMANSON (H F) & CO	AHM	0.612	0.612	0.624	0.618	0.640
AIR PRODUCTS & CHEMICALS INC	APD	0.513	0.573	0.504	0.555	0.717
ALBERTO-CULVER CO -CL B	ACV	0.159	0.149	0.154	0.207	0.134
ALBERTSONS INC	ABS	0.365	0.528	0.398	0.485	0.340
ALCAN ALUMINIUM LTD	AL	0.546	0.417	0.322	0.459	0.658
ALCO STANDARD CORP	ASN	0.579	0.685	0.467	0.431	0.300
ALEXANDER & ALEXANDER	AAL	0.653	0.427	0.471	0.488	0.450
ALLERGAN INC	AGN	0.486	0.399	0.440	0.595	0.709
ALLIEDSIGNAL INC	ALD	0.485	0.570	0.670	0.646	0.475
ALUMINUM CO OF AMERICA	AA	1.231	0.934	0.976	0.840	1.298
ALZA CORP	AZA	1.089	1.520	0.942	0.933	0.957
AMDAHL CORP	AMH	0.689	0.729	0.909	0.654	0.705
AMERADA HESS CORP	AHC	0.636	0.621	0.784	0.634	0.754
AMERICAN BRANDS INC/DE	AMB	0.426	0.582	0.357	0.455	0.536
AMERICAN CYANAMID CO	ACY		0.754	0.687	0.823	0.928
AMERICAN ELECTRIC POWER	AEP	0.482	0.370	0.354	0.381	0.386
AMERICAN EXPRESS	AXP	0.799	0.764	0.677	0.890	0.679
AMERICAN GENERAL CORP	AGC	0.434	0.426	0.364	0.458	1.174
AMERICAN GREETINGS -CL A	AGREA	1.334	1.370	1.376	1.435	1.413
AMERICAN HOME PRODUCTS CORP	AHP	0.382	0.431	0.432	0.397	0.346
AMERICAN INTERNATIONAL GROUP	AIG	0.391	0.413	0.428	0.390	0.460
AMERICAN STORES CO	ASC	0.566	0.510	0.468	0.632	0.583
AMERITECH CORP	AIT	0.242	0.318	0.209	0.220	0.236
AMGEN INC	AMGN	2.647	3.725	2.417	3.830	4.219
AMOCO CORP	AN	0.359	0.341	0.323	0.281	0.343
AMP INC	AMP	0.560	0.508	0.527	0.461	0.595
AMR CORP/DE	AMR	1.570	2.072	2.138	1.878	2.038
ANDREW CORP	ANDW	1.822	2.058	1.594	1.003	0.991
ANHEUSER-BUSCH COS INC	BUD	0.412	0.508	0.392	0.358	0.387
APPLE COMPUTER INC	AAPL	4.269	4.342	3.105	4.337	3.435
ARCHER-DANIELS-MIDLAND CO	ADM	0.473	0.489	0.535	0.607	0.582
ARMCO INC	AS	0.584	0.777	0.526	0.558	0.614
ARMSTRONG WORLD INDS INC	ACK	1.184	0.859	0.798	0.785	0.894
ASARCO INC	AR	1.227	0.903	0.880	0.601	0.598
ASHLAND INC	ASH	0.898	0.673	0.523	0.448	0.533
AT&T CORP	T	0.328	0.348	0.320	0.349	0.381

S P 500 SHARE TURNOVER DATA

COMPANY	Ticker	SHARE TURNOVER 1994	1993	1992	1991	1990
ATLANTIC RICHFIELD CO	ARC	0.568	0.518	0.413	0.498	0.492
AUTODESK INC	ACAD	4.347	5.529	4.392	4.703	2.868
AUTOMATIC DATA PROCESSING	AUD	0.420	0.441	0.386	0.425	0.610
AVERY DENNISON CORP	AVY	0.546	0.413	0.459	0.478	0.633
AVON PRODUCTS	AVP	0.890	0.980	0.784	1.441	1.176
BAKER-HUGHES INC	BHI	1.126	1.128	1.153	1.027	0.957
BALL CORP	BLL	0.678	0.756	0.621	0.553	0.302
BALLY ENTMT CORP	BLY	1.045	2.064	1.375	1.298	2.268
BALTIMORE GAS & ELECTRIC	BGE	0.442	0.345	0.342	0.377	0.480
BANC ONE CORP	ONE	0.613	0.521	0.483	0.414	0.398
BANK OF BOSTON CORP	BKB	0.962	1.233	1.618	1.711	1.516
BANKAMERICA CORP	BAC	0.734	0.863	0.737	1.191	0.997
BANKERS TRUST NEW YORK CORP	BT	1.019	0.693	0.612	0.806	0.734
BARD (C.R.) INC	BCR	0.764	1.079	0.770	1.167	1.256
BARNETT BANKS INC	BBI	0.692	0.725	0.635	0.879	0.860
BARRICK GOLD CORPORATION	ABX	0.904	1.144	0.564	0.436	0.573
BASSETT FURNITURE INDS	BSET	0.556	0.622	0.597	0.198	0.250
BAUSCH & LOMB INC	BOL	1.312	0.784	0.609	0.649	0.767
BAXTER INTERNATIONAL INC	BAX	0.573	0.842	0.548	0.554	0.718
BECTON DICKINSON & CO	BDX	0.633	0.559	0.621	1.030	0.695
BELL ATLANTIC CORP	BEL	0.289	0.312	0.311	0.260	0.264
BELLSOUTH CORP	BLS	0.271	0.207	0.215	0.183	0.208
BEMIS CO	BMS	0.277	0.279	0.275	0.333	0.238
BENEFICIAL CORP	BNL	0.410	0.546	0.530	0.561	0.641
BETHLEHEM STEEL CORP	BS	1.482	1.759	0.917	1.006	0.770
BEVERLY ENTERPRISES	BEV	1.261	1.570	1.291	1.474	1.522
BIOMET INC	BMET	0.900	1.289	1.540	1.460	1.754
BLACK & DECKER CORP	BDK	1.001	0.874	1.372	1.371	1.272
BLOCK H & R INC	HRB	0.774	0.565	0.527	0.458	0.473
BLOCKBUSTER ENMNT CORP	BV		0.944	1.197	1.924	1.188
BOATMENS BANCSHARES INC	BOAT	0.775	0.837	0.724	0.778	0.712
BOEING CO	BA	0.610	0.706	0.860	0.937	0.925
BOISE CASCADE CORP	BCC	1.148	0.966	0.705	0.840	1.007
BORDEN INC	BN	1.156	1.180	0.598	0.543	0.458
BRIGGS & STRATTON	BGG	0.961	0.816	0.715	0.731	0.602
BRISTOL MYERS SQUIBB	BMY	0.465	0.736	0.645	0.497	0.486
BROWN GROUP INC	BG	0.391	0.425	0.438	0.444	0.488
BROWN-FORMAN -CL B	BF.B	0.190	0.241	0.188	0.161	0.185
BROWNING-FERRIS INDS	BFI	0.747	0.658	0.676	0.903	0.926

S P 500 SHARE TURNOVER DATA

COMPANY	Ticker	SHARE TURNOVER 1994	1993	1992	1991	1990
BRUNOS INC	3BRNO	0.812	0.961	0.769	0.958	0.399
BRUNSWICK CORP	BC	0.895	0.544	0.700	0.853	0.460
BURLINGTON NORTHRN INC	BNI	1.022	0.924	0.979	1.031	0.859
BURLINGTON RESOURCES INC	BR	0.638	0.742	0.619	0.663	0.652
CAMPBELL SOUP CO	CPB	0.227	0.221	0.271	0.320	0.383
CAPITAL CITIES/ABC INC	CCB	0.484	0.457	0.368	0.455	0.465
CAROLINA POWER & LIGHT	CPL	0.344	0.382	0.404	0.307	0.441
CATERPILLAR INC	CAT	1.151	0.932	0.794	0.750	0.933
CBS INC	CBS	1.308	1.027	1.184	0.978	0.624
CENTEX CORP	CTX	1.790	1.129	1.275	0.823	0.890
CENTRAL & SOUTH WEST CORP	CSR	0.455	0.357	0.374	0.353	0.519
CERIDIAN CORP	CEN	1.063	0.669	0.865	0.625	0.809
CHAMPION INTERNATIONAL CORP	CHA	0.725	0.471	0.535	0.724	0.795
CHARMING SHOPPES	CHRS	1.235	2.496	2.280	2.201	1.094
CHASE MANHATTAN CORP	CMB	1.107	1.303	1.325	1.402	1.858
CHEMICAL BANKING CORP	CHL	0.987	1.037	1.165	0.717	1.339
CHEVRON CORP	CHV	0.422	0.456	0.352	0.299	0.386
CHRYSLER CORP	C	1.609	1.593	1.446	0.665	0.725
CHUBB CORP	CB	0.661	0.651	0.716	0.640	0.869
CIGNA CORP	CI	0.741	0.570	0.528	0.567	0.651
CINCINNATI MILACRON INC	CMZ	0.623	0.980	0.575	0.597	0.394
CIRCUIT CITY STORES INC	CC	1.414	1.482	1.322	1.436	1.319
CISCO SYSTEMS INC	CSCO	4.313	4.907	4.593	6.332	3.078
CITICORP	CCI	1.160	1.385	1.237	1.183	1.229
CLARK EQUIPMENT CO	CKL	1.255	1.225	0.811	0.802	0.803
CLOROX CO/DE	CLX	0.413	0.481	0.514	0.471	0.450
CNA FINANCIAL CORP	CNA	0.207	0.077	0.076	0.086	0.124
COASTAL CORP	CGP	0.634	0.635	0.755	0.764	0.501
COCA-COLA CO	KO	0.314	0.278	0.321	0.310	0.390
COLGATE-PALMOLIVE CO	CL	0.725	0.875	0.507	0.615	0.753
COLUMBIA GAS SYSTEM	CG	0.601	0.680	0.707	1.637	0.629
COLUMBIA/HCA HLTHCR -VTG	COL	0.758	0.264	0.807	0.863	0.130
COMCAST CORP -CL A SPL	CMCSK	1.372	0.937	0.551	0.392	0.500
COMMONWEALTH EDISON CO	UCM1	0.311	0.474	0.727	0.518	0.517
COMMUNITY PSYCHIATRIC CNTRS	CMY	1.578	1.087	1.227	2.217	1.200
COMPAQ COMPUTER CORP	CPQ	3.005	3.227	2.981	3.238	3.139
COMPUTER ASSOCIATES INTL INC	CA	1.144	0.849	0.968	0.907	0.906
COMPUTER SCIENCES CORP	CSC	0.738	0.749	0.892	1.186	0.964
CONAGRA INC	CAG	0.423	0.394	0.488	0.458	0.368

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S P 500 SHARE TURNOVER DATA

COMPANY	Ticker	SHARE TURNOVER 1994	1993	1992	1991	1990
CONRAIL INC	CRR	1.032	1.005	1.259	1.349	1.436
CONSOLIDATED EDISON OF NY	ED	0.428	0.296	0.341	0.432	0.365
CONSOLIDATED FREIGHTWAYS INC	CNF	1.378	0.960	0.770	1.250	1.503
CONSOLIDATED NATURAL GAS CO	CNG	0.436	0.323	0.387	0.261	0.253
CONTINENTAL CORP	CIC		0.713	0.770	0.606	0.755
COOPER INDUSTRIES INC	CBE	0.748	0.496	0.593	0.429	0.492
COOPER TIRE & RUBBER	CTB	0.615	1.138	0.575	0.590	0.830
COORS (ADOLPH) -CL B	ACCOB	0.630	0.772	0.686	0.929	1.106
CORESTATES FINANCIAL CORP	CFL	0.475	1.116	1.192	1.326	1.338
CORNING INC	GLW	0.476	0.650	0.614	0.430	0.464
CPC INTERNATIONAL INC	CPC	0.505	0.451	0.467	0.595	0.475
CRANE CO	CR	0.418	0.418	0.362	0.520	0.339
CRAY RESEARCH	CYR	1.503	1.077	1.295	1.130	1.501
CROWN CORK & SEAL CO INC	CCK	0.568	0.525	0.438	0.450	0.503
CSX CORP	CSX	0.565	0.596	0.574	0.585	0.427
CUMMINS ENGINE	CUM	1.010	1.379	1.198	0.903	0.646
CYPRUS AMAX MINERALS CO	CYM	1.068	0.809	1.063	0.771	0.717
DANA CORP	DCN	0.672	0.599	0.699	0.374	0.357
DATA GENERAL CORP	DGN	1.083	0.957	1.673	2.646	0.880
DAYTON HUDSON CORP	DH	1.065	0.944	1.050	0.961	0.902
DEAN WITTER DISCOVER & CO	DWD	0.686	0.764			
DEERE & CO	DE	1.493	1.204	0.941	1.044	1.389
DELTA AIR LINES INC	DAL	1.301	1.691	1.621	1.457	1.366
DELUXE CORP	DLX	0.537	0.507	0.320	0.384	0.296
DETROIT EDISON CO	DTE	0.596	0.452	0.394	0.371	0.504
DIAL CORP/DE	DL	0.756	0.579	0.611	0.586	0.696
DIGITAL EQUIPMENT	DEC	1.983	1.215	1.351	1.330	1.294
DILLARD DEPT STORES -CL A	DDS	1.023	0.974	0.940	0.859	0.523
DISNEY (WALT) COMPANY	DIS	0.577	0.669	0.856	0.883	1.064
DOMINION RESOURCES INC	D	0.383	0.277	0.292	0.370	0.486
DONNELLEY (R R) & SONS CO	DNY	0.349	0.335	0.292	0.353	0.346
DOVER CORP	DOV	0.394	0.304	0.298	0.411	0.431
DOW CHEMICAL	DOW	0.664	0.510	0.463	0.545	0.693
DOW JONES & CO INC	DJ	0.491	0.366	0.338	0.215	0.241
DRESSER INDUSTRIES INC	DI	0.763	0.939	0.795	0.874	0.899
DSC COMMUNICATIONS CORP	DIGI	5.235	6.031	3.578	2.793	3.268
DU PONT (E I) DE NEMOURS	DD	0.393	0.319	0.312	0.318	0.319
DUKE POWER CO	DUK	0.366	0.246	0.280	0.322	0.428
DUN & BRADSTREET CORP	DNB	0.373	0.408	0.318	0.375	0.510

S P 500 SHARE TURNOVER DATA

COMPANY	Ticker	SHARE TURNOVER 1994	1993	1992	1991	1990
E-SYSTEMS INC	ESY	0.769	0.766	0.612	0.864	0.650
EASTERN ENTERPRISES	EFU	0.528	0.640	0.611	0.516	0.535
EASTMAN KODAK CO	EK	0.799	1.180	0.676	0.701	0.767
EATON CORP	ETN	0.634	0.524	0.628	0.515	0.470
ECHLIN INC	ECH	0.885	0.726	0.892	0.602	0.507
ECHO BAY MINES LTD	ECO	1.478	2.397	0.688	0.748	0.896
ECOLAB INC	ECL	0.268	0.249	0.382	0.422	0.639
EG&G INC	EGG	0.525	0.534	0.500	0.470	0.530
EMERSON ELECTRIC CO	EMR	0.372	0.359	0.320	0.338	0.398
ENGELHARD CORP	EC	0.628	0.442	0.410	0.460	0.353
ENRON CORP	ENE	0.495	0.517	0.530	0.497	0.406
ENSERCH CORP	ENS	0.657	0.636	0.593	0.628	0.491
ENTERGY CORP	ETR	0.754	0.369	0.546	0.521	0.552
ETHYL CORP	EY	0.646	0.457	0.422	0.375	0.372
EXXON CORP	XON	0.244	0.222	0.210	0.224	0.237
FED HOME LOAN MTG CO	FRE	0.572	0.603	0.726	0.921	1.329
FEDDERS CORP	FJC	1.169	1.053	1.110	1.441	1.374
FEDERAL EXPRESS CORP	FDX	1.057	0.913	1.057	0.754	1.031
FEDERAL NATL MORTGAGE ASSN	FNM	0.748	0.691	0.731	0.962	1.358
FEDERAL PAPER BOARD CO	FBO	0.979	0.837	0.999	1.244	0.717
FIRST CHICAGO CORP	FNB	0.966	0.921	1.028	0.861	1.071
FIRST FID BANCORPORATION	FFB	0.479	0.573	0.454	0.431	0.725
FIRST INTERSTATE BNCP	I	1.220	1.160	1.301	1.203	1.444
FIRST MISSISSIPPI CORP	FRM	1.053	0.619	0.747	0.448	0.588
FIRST UNION CORP (N C)	FTU	0.463	0.632	0.686	0.562	0.460
FLEET FINANCIAL GROUP INC	FLT	0.907	0.693	0.479	0.552	0.576
FLEETWOOD ENTERPRISES	FLE	0.806	1.085	1.245	0.893	0.635
FLEMING COMPANIES INC	FLM	0.879	0.745	0.894	0.872	0.803
FLUOR CORP	FLR	1.076	0.699	0.721	1.162	0.958
FMC CORP	FMC	0.459	0.488	0.467	0.407	0.398
FORD MOTOR CO	F	0.814	0.763	0.808	0.572	0.462
FOSTER WHEELER CORP	FWC	1.024	0.761	0.699	0.982	0.909
FOXMEYER HEALTH CORP	FOX	0.588	0.860	0.398	0.747	0.807
FPL GROUP INC	FPL	0.607	0.485	0.424	0.466	0.398
GANNETT CO	GCI	0.645	0.473	0.379	0.469	0.423
GAP INC	GPS	1.326	0.998	1.350	0.936	1.117
GENERAL DYNAMICS CORP	GD	0.698	0.698	1.366	1.002	0.537
GENERAL ELECTRIC CO	GE	0.336	0.306	0.317	0.417	0.454
GENERAL MILLS INC	GIS	0.609	0.478	0.418	0.373	0.524

S P 500 SHARE TURNOVER DATA

COMPANY	Ticker	SHARE TURNOVER 1994	1993	1992	1991	1990
GENERAL MOTORS CORP	GM	0.931	0.815	0.761	0.586	0.486
GENERAL RE CORP	GRN	0.651	0.547	0.628	0.538	0.551
GENERAL SIGNAL CORP	GSX	0.768	0.589	0.654	0.628	0.724
GENESCO INC	GCO	0.918	1.161	0.698	0.584	0.622
GENUINE PARTS CO	GPC	0.289	0.284	0.317	0.400	0.408
GEORGIA-PACIFIC CORP	GP	1.258	1.036	1.012	0.850	0.771
GERBER PRODUCTS CO	GEB		0.740	0.817	0.574	0.789
GIANT FOOD INC -CL A	GFS.A	0.316	0.279	0.350	0.366	0.274
GIDDINGS & LEWIS INC/WI	GIDL	1.972	2.053	2.767	1.829	1.800
GILLETTE CO	G	0.473	0.623	0.511	0.715	0.964
GOLDEN WEST FINANCIAL CORP	GDW	0.498	0.493	0.446	0.593	0.660
GOODRICH (B F) CO	GR	0.747	0.869	1.278	0.882	0.805
GOODYEAR TIRE & RUBBER CO	GT	1.048	0.949	1.333	1.394	1.136
GRACE (W R) & CO	GRA	0.440	0.616	0.861	0.797	0.651
GRAINGER (W W) INC	GWW	0.504	0.460	0.453	0.492	0.429
GREAT ATLANTIC & PAC TEA CO	GAP	0.266	0.373	0.626	0.414	0.392
GREAT LAKES CHEMICAL CORP	GLK	1.007	0.633	0.678	0.608	0.560
GREAT WESTERN FINANCIAL	GWF	0.716	0.974	0.695	0.736	0.821
GRUMMAN CORP	GQ		0.670	0.340	0.450	0.455
GTE CORP	GTE	0.370	0.308	0.306	0.336	0.363
HALLIBURTON CO	HAL	1.005	1.030	1.183	1.197	1.067
HANDLEMAN CO	HDL	0.588	0.789	0.647	0.986	0.707
HARCOURT GENERAL INC	H	0.500	0.497	0.556	0.403	0.333
HARLAND (JOHN H.) CO	JH	0.542	0.479	0.510	0.494	0.473
HARNISCHFEGER INDUSTRIES INC	HPH	1.035	0.840	0.808	0.795	1.284
HARRAHS ENTERTAINMENT INC	HET	1.789	1.732	0.924	1.043	1.052
HARRIS CORP	HRS	0.730	0.674	0.634	0.744	0.730
HARTMARX CORP	HMX	0.313	0.498	0.994	0.612	0.704
HASBRO INC	HAS	0.790	0.684	0.593	0.767	0.531
HEINZ (H J) CO	HNZ	0.467	0.399	0.444	0.452	0.287
HELMERICH & PAYNE	HP	0.513	0.642	0.493	0.724	0.704
HERCULES INC	HPC	0.878	0.784	0.769	0.802	0.579
HERSHEY FOODS CORP	HSY	0.363	0.335	0.270	0.302	0.344
HEWLETT-PACKARD CO	HWP	0.811	0.760	0.858	0.717	0.603
HILTON HOTELS CORP	HLT	0.998	0.831	0.632	0.939	1.770
HOME DEPOT INC	HD	0.636	0.848	0.842	0.927	1.174
HOMESTAKE MINING	HM	1.458	1.788	0.763	0.822	0.966
HONEYWELL INC	HON	0.643	0.701	0.605	0.764	1.311
HOUSEHOLD INTERNATIONAL INC	HI	0.672	0.605	0.633	0.912	1.115

S P 500 SHARE TURNOVER DATA

COMPANY	Ticker	SHARE TURNOVER 1994	1993	1992	1991	1990
HOUSTON INDUSTRIES INC	HOU	0.591	0.446	0.466	0.604	0.530
ILLINOIS TOOL WORKS	ITW	0.308	0.266	0.270	0.337	0.340
INCO LTD	N	0.891	0.541	0.440	0.467	0.600
INGERSOLL-RAND CO	IR	0.544	0.629	0.570	0.676	0.832
INLAND STEEL INDUSTRIES INC	IAD	1.167	0.823	0.699	0.730	0.784
INTEL CORP	INTC	2.867	3.499	2.607	2.699	2.360
INTERGRAPH CORP	INGR	0.892	0.921	1.416	2.401	1.719
INTERPUBLIC GROUP OF COS	IPG	0.404	0.670	0.442	0.455	0.484
INTL BUSINESS MACHINES CORP	IBM	1.026	0.997	0.894	0.769	0.705
INTL FLAVORS & FRAGRANCES	IFF	0.340	0.419	0.344	0.489	0.501
INTL PAPER CO	IP	1.046	0.851	0.942	0.985	0.888
ITT CORP	ITT	0.875	0.550	0.641	0.547	0.644
JAMES RIVER CORP OF VIRGINIA	JR	0.739	0.497	0.430	0.677	0.540
JEFFERSON-PILOT CORP	JP	0.349	0.326	0.404	0.410	0.362
JOHNSON & JOHNSON	JNJ	0.466	0.548	0.477	0.554	0.520
JOHNSON CONTROLS INC	JCI	0.567	0.462	0.498	0.495	0.501
JOSTENS INC	JOS	0.586	0.834	0.675	0.523	0.353
K MART CORP	KM	0.813	0.850	0.670	0.759	0.610
KAUFMAN & BROAD HOME	KBH	1.671	1.205	1.690	1.244	0.828
KELLOGG CO	K	0.317	0.352	0.256	0.296	0.320
KERR-MCGEE CORP	KMG	0.555	0.561	0.685	0.514	0.735
KIMBERLY-CLARK CORP	KMB	0.469	0.482	0.445	0.498	0.578
KING WORLD PRODUCTIONS INC	KWP	1.037	0.636	0.711	0.623	0.671
KNIGHT-RIDDER INC	KRI	0.605	0.543	0.453	0.468	0.368
KROGER CO	KR	0.750	0.948	0.740	0.744	0.456
LILLY (ELI) & CO	LLY	0.597	0.539	0.462	0.608	0.610
LIMITED INC	LTD	0.725	0.870	0.871	0.817	0.612
LINCOLN NATIONAL CORP	LNC	0.488	0.537	0.461	0.356	0.327
LITTON INDUSTRIES INC	LIT	0.757	0.950	0.590	0.707	0.718
LIZ CLAIBORNE INC	LIZ	1.126	1.416	1.035	1.311	1.822
LOCKHEED MARTIN CORP	LMT	0.280	0.434	0.483	1.056	0.478
LONGS DRUG STORES INC	LDG	0.343	0.256	0.337	0.373	0.220
LORAL CORP	LOR	0.653	0.777	0.738	1.031	0.875
LOTUS DEVELOPMENT CORP	LOTS	9.053	6.522	5.444	5.367	3.736
LOUISIANA LAND & EXPLORATION	LLX	0.858	0.555	0.573	0.581	0.531
LOUISIANA-PACIFIC CORP	LPX	0.924	1.214	1.131	0.875	0.766
LOWES COS	LOW	0.970	0.975	1.190	0.776	1.243
LUBYS CAFETERIAS INC	LUB	0.437	0.509	0.498	0.506	0.409
M/A-COM INC	MAI	0.643	0.923	0.579	0.503	0.570

S P 500 SHARE TURNOVER DATA

COMPANY	Ticker	SHARE TURNOVER 1994	1993	1992	1991	1990
MALLINCKRODT GROUP INC	MKG	0.904	0.955	1.064	0.834	0.860
MANOR CARE INC	MNR	0.505	0.759	0.524	0.550	0.364
MARRIOTT INTL INC	MAR	0.494	0.186			
MARSH & MCLENNAN COS	MMC	0.389	0.408	0.343	0.400	0.414
MARTIN MARIETTA CORP	ML		0.540	0.670	0.779	0.606
MASCO CORP	MAS	0.750	0.663	0.606	0.523	0.489
MATTEL INC	MAT	0.643	1.148	1.045	1.201	1.150
MAXUS ENERGY CORP	MXS	0.755	1.370	1.188	1.095	0.790
MAY DEPARTMENT STORES CO	MA	0.546	0.529	0.511	0.448	0.503
MAYTAG CORP	MYG	1.039	0.609	0.819	0.661	0.627
MBNA CORP	KRB	0.763	0.797	0.767	1.228	
MCCAW CELLULAR COMM -CL A	MCAWA		1.351	0.957	0.772	0.959
MCDERMOTT INTL INC	MDR	0.817	0.901	0.899	1.153	1.352
MCDONALDS CORP	MCD	0.563	0.481	0.537	0.676	0.611
MCDONNELL DOUGLAS CORP	MD	0.960	1.376	1.252	1.376	1.038
MCGRAW-HILL COMPANIES	MHP	0.589	0.558	0.447	0.487	0.887
MCI COMMUNICATIONS	MCIC	1.137	1.447	1.141	1.405	2.253
MCKESSON CORP	MCK	1.733	0.675	0.592	0.466	0.517
MEAD CORP	MEA	0.855	0.622	0.648	0.618	0.806
MEDTRONIC INC	MDT	0.761	1.254	0.773	0.735	0.850
MELLON BANK CORP	MEL	0.584	0.924	0.814	0.649	0.540
MELVILLE CORP	MES	0.493	0.524	0.386	0.434	0.517
MERCANTILE STORES CO INC	MST	0.989	0.317	0.306	0.287	0.277
MERCK & CO	MRK	0.542	0.631	0.508	0.423	0.519
MEREDITH CORP	MDP	0.452	0.535	0.350	0.412	0.390
MERRILL LYNCH & CO	MER	1.327	1.379	1.192	1.419	0.730
MILLIPORE CORP	MIL	1.150	0.863	0.809	0.649	0.585
MINNESOTA MINING & MFG CO	MMM	0.371	0.390	0.351	0.465	0.525
MOBIL CORP	MOB	0.416	0.444	0.384	0.403	0.432
MONSANTO CO	MTC	0.850	0.730	0.826	0.739	0.863
MOORE CORP LTD	MCL	0.291	0.224	0.208	0.133	0.173
MORGAN (J P) & CO	JPM	0.717	0.675	0.741	0.710	0.679
MORRISON KNUDSEN CORP	MRN	1.042	0.818	0.935	1.141	1.192
MORTON INTL INC	MII	0.806	0.729	0.592	0.691	0.650
MOTOROLA INC	MOT	0.995	1.256	0.864	0.956	1.292
NACCO INDUSTRIES -CL A	NC	0.391	0.337	0.389	0.392	0.471
NALCO CHEMICAL CO	NLC	0.573	0.546	0.495	0.585	0.549
NATIONAL EDUCATION CORP	NEC	0.591	0.661	0.620	0.746	0.695
NATIONAL SEMICONDUCTOR CORP	NSM	2.345	1.718	1.694	1.089	1.115

S P 500 SHARE TURNOVER DATA

COMPANY	Ticker	SHARE TURNOVER 1994	1993	1992	1991	1990
NATIONAL SERVICE INDS INC	NSI	0.320	0.332	0.329	0.358	0.216
NATIONSBANK CORP	NB	0.687	0.623	0.731	0.435	0.996
NAVISTAR INTERNATIONL	NAV	0.688	0.634	0.608	0.485	0.574
NBD BANCORP INC	NBD	0.326	0.248	0.292	0.329	0.247
NEW YORK TIMES CO -CL A	NYT.A	0.529	0.503	0.403	0.356	0.436
NEWELL COMPANIES	NWL	0.553	0.668	0.678	0.496	0.514
NEWMONT MINING CORP	NEM	1.237	1.728	0.538	0.482	0.595
NIAGARA MOHAWK POWER	NMK	0.824	0.601	0.510	0.583	0.446
NICOR INC	GAS	0.350	0.429	0.466	0.491	0.590
NIKE INC -CL B	NKE		1.276	0.904	1.436	2.996
NL INDUSTRIES	NL	0.405	0.192	0.190	0.217	0.186
NORAM ENERGY CORP	NAE	0.517	0.652	1.107	0.769	0.479
NORDSTROM INC	NOBE	1.836	1.562	1.402	1.490	1.608
NORFOLK SOUTHERN CORP	NSC	0.399	0.340	0.354	0.392	0.425
NORTHERN STATES POWER/MN	NSP	0.369	0.304	0.338	0.360	0.346
NORTHERN TELECOM LTD	NT	0.351	0.412	0.224	0.164	0.243
NORTHROP GRUMMAN CORP	NOC	0.669	0.543	0.369	0.722	0.755
NORWEST CORP	NOB	0.483	0.541	0.419	0.501	0.393
NOVELL INC	NOVL	2.295	2.713	2.298	2.617	3.806
NUCOR CORP	NUE	0.656	0.586	0.473	0.538	0.501
NYNEX CORP	NYN	0.361	0.342	0.302	0.306	0.412
OCCIDENTAL PETROLEUM CORP	OXY	0.630	0.642	0.547	0.677	0.605
OGDEN CORP	OG	0.472	0.641	0.706	0.615	0.678
OHIO EDISON CO	OEC	0.371	0.285	0.305	0.399	0.499
ONEOK INC	OKE	0.417	0.477	0.524	0.526	0.468
ORACLE CORP	ORCL	1.958	2.795	2.418	2.435	2.979
ORYX ENERGY CO	ORX	0.860	0.944	0.741	0.546	0.463
OSHKOSH B'GOSH INC -CL A	GOSHA	1.148	0.864	0.868	1.324	1.510
OUTBOARD MARINE CORP	OM	1.187	1.014	1.121	1.117	0.745
OWENS CORNING FIBRGLAS	OCF	1.379	0.941	1.394	1.357	0.581
PACCAR INC	PCAR	0.654	0.612	0.748	0.645	0.487
PACIFIC ENTERPRISES	PET	0.442	0.544	0.663	0.473	0.280
PACIFIC GAS & ELECTRIC	PCG	0.400	0.326	0.248	0.251	0.303
PACIFIC TELESIS GROUP	PAC	0.478	0.430	0.316	0.280	0.305
PACIFICORP	PPW	0.351	0.401	0.381	0.274	0.299
PALL CORP	PLL	0.596	0.489	0.512	0.629	0.509
PANHANDLE EASTERN CORP	PEL	0.497	0.556	0.660	0.677	1.173
PARKER-HANNIFIN CORP	PH	0.781	0.600	0.515	0.483	0.500
PECO ENERGY CO	PE	0.486	0.433	0.474	0.405	0.522

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COMPANY	Ticker	SHARE TURNOVER 1994	1993	1992	1991	1990
PENNEY (J C) CO	JCP	0.702	0.684	0.741	0.563	0.654
PENNZOIL CO	PZL	0.599	0.682	0.554	0.431	0.480
PEOPLES ENERGY CORP	PGL	0.280	0.276	0.306	0.269	0.275
PEP BOYS-MANNY MOE & JACK	PBY	0.826	0.817	1.146	1.161	0.812
PEPSICO INC	PEP	0.530	0.465	0.389	0.620	0.556
PERKIN-ELMER CORP	PKN	0.690	0.690	0.755	0.811	0.824
PET INC	PT.	0.881	0.772	0.606	0.590	
PFIZER INC	PFE	0.681	0.901	0.662	0.645	0.929
PHELPS DODGE CORP	PD	1.417	1.652	1.454	1.359	1.624
PHILIP MORRIS COS INC	MO	0.676	0.824	0.529	0.541	0.566
PHILLIPS PETROLEUM CO	P	0.538	0.588	0.501	0.468	0.558
PIONEER HI-BRED INTERNATIONL	PHYB	0.864	0.810	0.642	0.581	0.644
PITNEY BOWES INC	PBI	0.559	0.386	0.378	0.463	0.598
PITTSTON CO-SERVICES GROUP	PZS	0.745	0.585		0.978	0.749
PLACER DOME INC	PDG	0.966	1.050	0.414	0.428	0.546
PNC BANK CORP	PNC	0.485	0.355	0.367	0.445	0.415
POLAROID CORP	PRD	0.585	0.788	1.070	0.859	0.850
POTLATCH CORP	PCH	0.396	0.397	0.307	0.580	0.391
PPG INDUSTRIES INC	PPG	0.437	0.360	0.435	0.416	0.384
PRAXAIR INC	PX	0.835	0.765	0.549		
PREMARK INTERNATIONAL INC	PMI	0.831	0.843	1.117	0.750	0.645
PRICE/COSTCO INC	PCCW	1.393	0.278			
PROCTER & GAMBLE CO	PG	0.286	0.324	0.301	0.449	0.445
PROVIDIAN CORP	PVN	0.504	0.467	0.513	0.593	0.597
PSI RESOURCES INC	CIN2		1.236	0.784	0.814	0.588
PUBLIC SERVICE ENTRP	PEG	0.367	0.419	0.424	0.377	0.308
PULTE CORP	PHM	0.753	0.829	1.186	0.488	0.474
QUAKER OATS CO	OAT	1.339	0.730	0.739	0.542	0.617
RALSTON PURINA GROUP	RAL	0.449	0.202		0.376	0.540
RAYCHEM CORP	RYC	0.595	0.734	0.586	0.667	0.958
RAYTHEON CO	RTN	0.590	0.440	0.454	0.776	0.772
REEBOK INTERNATIONAL LTD	RBK	0.702	1.086	1.284	1.312	0.790
REYNOLDS METALS CO	RLM	0.883	0.977	0.929	0.859	1.142
RITE AID CORP	RAD	1.024	0.660	0.527	0.741	0.514
ROADWAY SERVICES INC	ROAD	1.227	1.172	1.253	0.920	0.638
ROCKWELL INTL CORP	ROK	0.365	0.354	0.328	0.292	0.325
ROHM & HAAS CO	ROH	0.458	0.392	0.392	0.291	0.257
ROLLINS ENVIRONMENTAL SVCS	REN	0.551	0.936	0.873	0.932	0.743
ROWAN COS INC	RDC	0.895	0.883	1.055	1.147	0.968

S P 500 SHARE TURNOVER DATA

COMPANY	Ticker	SHARE TURNOVER 1994	1993	1992	1991	1990
ROYAL DUTCH PET -NY REG	RD	0.262	0.641	0.344	0.288	0.252
RUBBERMAID INC	RBD	0.515	0.378	0.353	0.308	0.309
RUSSELL CORP	RML	0.397	0.425	0.410	0.395	0.358
RYAN'S FAMILY STK HOUSES INC	RYAN	0.951	1.462	1.822	1.675	1.228
RYDER SYSTEM INC	R	0.686	0.744	0.710	0.683	0.780
SAFECO CORP	SAFC	1.071	1.005	0.758	0.765	0.792
SAFETY-KLEEN CORP	SK	0.735	0.859	0.546	0.691	0.582
SALOMON INC	SB	0.797	0.651	0.731	1.472	0.755
SANTA FE ENERGY RESOURCES	SFR	0.349	0.439	0.494	0.453	0.261
SANTA FE PACIFIC CORP	SFX	1.087	0.762	0.720	0.583	0.420
SARA LEE CORP	SLE	0.505	0.407	0.335	0.406	0.583
SBC COMMUNICATIONS INC	SBC	0.305	0.269	0.295	0.305	0.311
SCECORP	SCE	0.557	0.421	0.297	0.313	0.321
SCHERING-PLOUGH	SGP	0.740	0.835	0.717	0.911	0.566
SCHLUMBERGER LTD	SLB	0.557	0.615	0.615	0.612	0.646
SCIENTIFIC-ATLANTA INC	SFA	1.608	1.789	1.418	1.023	1.107
SCOTT PAPER CO	SPP	1.426	0.757	0.671	0.664	0.675
SEAGRAM CO LTD	VO	0.272	0.248	0.191	0.238	0.315
SEARS ROEBUCK & CO	S	0.669	0.716	0.574	0.475	0.459
SERVICE CORP INTERNATIONAL	SRV	0.494	0.670	0.649	0.768	0.725
SHARED MEDICAL SYSTEMS CORP	SMED	1.711	1.356	1.287	1.792	1.041
SHAWMUT NATIONAL CORP	SNC	1.081	1.162	1.052	1.356	0.724
SHERWIN-WILLIAMS CO	SHW	0.512	0.423	0.447	0.538	0.533
SHONEY'S INC	SHN	1.089	1.151	1.158	0.665	0.554
SKYLINE CORP	SKY	0.576	0.755	0.698	0.497	0.529
SNAP-ON INC	SNA	0.591	0.467	0.492	0.493	0.430
SONAT INC	SNT	0.743	0.826	0.692	0.709	0.638
SOUTHERN CO	SO	0.316	0.271	0.297	0.355	0.374
SPRINGS INDUSTRIES -CL A	SMI	0.368	0.405	0.421	0.379	0.379
SPRINT CORP	FON	0.637	0.546	0.613	0.646	0.901
SPX CORP	SPW	0.463	0.436	0.614	0.580	0.553
ST JUDE MEDICAL INC	STJM	1.852	2.460	2.874	2.247	2.463
ST PAUL COS	SPC	0.601	0.528	0.542	0.972	1.243
STANLEY WORKS	SWK	0.295	0.319	0.381	0.343	0.295
STONE CONTAINER CORP	STO	1.837	1.868	1.442	1.383	0.715
STRIDE RITE CORP	SRR	0.844	1.045	1.346	0.986	1.251
SUN CO INC	SUN	0.566	0.460	0.329	0.290	0.278
SUN MICROSYSTEMS INC	SUNW	3.906	3.957	3.844	4.104	3.898
SUNTRUST BANKS INC	STI	0.258	0.274	0.232	0.286	0.277

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COMPANY	Ticker	SHARE TURNOVER 1994	1993	1992	1991	1990
SUPERVALU INC	SVU	0.717	0.539	0.504	0.543	0.440
SYNTEX CORP	SYN		0.962	1.218	0.936	0.980
SYSCO CORP	SYY	0.503	0.446	0.456	0.493	0.478
TANDEM COMPUTERS INC	TDM	1.245	1.122	0.924	1.048	1.424
TANDY CORP	TAN	1.218	1.142	1.098	0.639	0.720
TEKTRONIX INC	TEK	1.112	0.657	0.804	1.126	0.791
TELE-COMM -SER A TCI GRP	TCOMA	1.143	1.561	1.032	0.708	0.978
TELEDYNE INC	TDY	0.534	0.517	0.500	0.475	0.351
TEMPLE-INLAND INC	TIN	0.642	0.635	0.586	0.557	0.466
TENET HEALTHCARE CORP	THC	1.051	1.361	1.011	1.097	0.854
TENNECO INC	TEN	0.718	0.699	0.607	1.015	0.749
TEXACO INC	TX	0.546	0.645	0.615	0.567	0.731
TEXAS INSTRUMENTS INC	TXN	2.154	1.968	1.209	1.227	1.206
TEXAS UTILITIES CO	TXU	0.576	0.588	0.690	0.646	1.049
TEXTRON INC	TXT	0.462	0.463	0.401	0.461	0.427
THOMAS & BETTS CORP	TNB	0.511	0.477	0.447	0.465	0.402
TIME WARNER INC	TWX	0.668	0.714	0.767	0.974	0.904
TIMES MIRROR COMPANY -SER A	TMC	0.441	0.343	0.236	0.249	0.289
TIMKEN CO	TKR	0.488	0.448	0.371	0.447	0.462
TJX COMPANIES INC	TJX	1.382	1.138	0.879	0.815	0.647
TORCHMARK CORP	TMK	0.471	0.394	0.382	0.310	0.343
TOYS R US INC	TOY	0.690	0.605	0.649	0.705	0.769
TRANSAMERICA CORP	TA	0.378	0.387	0.324	0.442	0.348
TRANSCO ENERGY CO	E	0.660	0.639	1.096	1.191	0.632
TRAVELERS GROUP INC	TRV	0.627	0.612	0.587	0.710	0.775
TRIBUNE CO	TRB	0.627	0.457	0.356	0.397	0.455
TRINOVA CORP	TNV	0.665	0.622	0.659	0.716	0.732
TRW INC	TRW	0.475	0.600	0.464	0.388	0.443
TYCO INTL INC	TYC	0.894	0.491	0.521	0.853	
U S BANCORP	USBC	0.998	0.666	0.706	1.259	1.153
U S SURGICAL CORP	USS	3.215	3.229	2.631	1.532	1.219
U S WEST INC	USW	0.412	0.374	0.262	0.287	0.292
UAL CORP	UAL	2.751	2.379	2.169	2.042	3.421
UNILEVER N V -NY SHARES	UN	0.198	0.544	0.372	0.365	0.276
UNION CAMP CORP	UCC	0.543	0.588	0.704	0.667	0.575
UNION CARBIDE CORP	UK	1.262	1.150	1.451	0.832	1.208
UNION ELECTRIC CO	UEP	0.395	0.328	0.393	0.439	0.327
UNION PACIFIC CORP	UNP	0.526	0.389	0.389	0.464	0.505
UNISYS CORP	UIS	1.519	1.433	2.137	1.230	1.221

S P 500 SHARE TURNOVER DATA

COMPANY	Ticker	SHARE TURNOVER 1994	1993	1992	1991	1990
UNITED TECHNOLOGIES CORP	UTX	0.711	0.636	0.712	0.764	0.650
UNOCAL CORP	UCL	0.564	0.757	0.761	0.679	0.647
UPJOHN CO	UPJ	0.755	0.725	0.982	1.269	1.050
USAIR GROUP	U	2.139	2.513	1.879	1.827	1.297
USF&G CORP	FG	0.770	0.981	1.137	1.207	0.968
USLIFE CORP	USH	0.418	0.513	0.565	0.544	0.602
UST INC	UST	0.516	0.661	0.378	0.394	0.412
USX-MARATHON GROUP	MRO	0.468	0.453	0.731	0.619	
USX-U S STEEL GROUP	X	1.389	1.433	0.938	1.053	
VARITY CORP	VAT	1.187	1.432	0.865	0.648	0.650
VF CORP	VFC	0.531	1.002	0.590	0.521	0.547
WACHOVIA CORP	WB	0.316	0.367	0.193	0.261	0.249
WAL-MART STORES	WMT	0.288	0.363	0.253	0.291	0.341
WALGREEN CO	WAG	0.537	0.424	0.385	0.489	0.482
WARNER-LAMBERT CO	WLA	0.750	0.848	0.762	0.891	0.673
WELLS FARGO & CO	WFC	0.897	1.222	1.600	1.706	1.482
WENDY'S INTERNATIONAL INC	WEN	0.794	0.946	1.051	1.320	0.881
WESTINGHOUSE ELECTRIC CORP	WX	0.748	0.783	0.806	0.915	0.610
WESTVACO CORP	W	0.449	0.318	0.274	0.325	0.277
WEYERHAEUSER CO	WY	0.653	0.830	0.619	0.564	0.427
WHIRLPOOL CORP	WHR	0.907	0.861	0.717	0.689	0.544
WHITMAN CORP	WH	0.379	0.399	0.378	0.621	0.636
WILLIAMS COS INC	WMB	1.445	0.994	1.048	0.701	0.878
WINN-DIXIE STORES INC	WIN	0.169	0.220	0.171	0.140	0.179
WMX TECHNOLOGIES INC	WMX	0.653	0.712	0.539	0.589	0.556
WOOLWORTH CORP	Z	1.199	0.912	0.726	0.811	0.770
WORTHINGTON INDUSTRIES	WTHG	0.491	0.597	0.528	0.694	0.485
WRIGLEY (WM) JR CO	WWY	0.278	0.249	0.215	0.177	0.154
XEROX CORP	XRX	0.797	0.836	0.660	0.857	0.760
YELLOW CORP	YELL	1.957	1.491	1.096	1.328	1.131
ZENITH ELECTRONICS CORP	ZE	2.001	1.004	1.064	0.693	0.919
ZURN INDUSTRIES INC	ZRN	0.641	0.752	0.664	0.786	0.823
TOTAL		0.710	0.713	0.635	0.653	0.640

S P 500 SHARE TURNOVER DATA

COMPANY	Ticker	SHARE TURNOVER 1994	1993	1992	1991	1990
SUMMARY STATISTICS						
COUNT		490	500	495	496	491
SUM						
MINIMUM		0.159	0.077	0.076	0.086	0.124
MAXIMUM		9.053	6.522	5.444	6.332	4.219
AVERAGE		0.829	0.824	0.769	0.787	0.758
MEDIAN		0.655	0.658	0.621	0.622	0.610
STD		0.690	0.697	0.590	0.634	0.560

TELEPHONE SHARE TURNOVER DATA

COMPANY	TICKER	SHARES OUTSTANDING 1994	1993	1992	1991	1990	SHARES TRADED 1994	1993	1992	1991	1990
ALLTEL CORP	AT	187.981	187.458	92.339	79.192	79.219	53.567	52.188	24.585	18.445	24.555
AMERITECH CORP	AIT	551.462	273.322	270.172	266.633	264.326	133.313	86.990	56.561	58.619	62.317
AT&T CORP	T	1,569.006	1,352.398	1,339.831	1,309.352	1,092.143	514.170	471.191	428.910	457.365	416.450
BELL ATLANTIC CORP	BEL	436.186	436.080	433.969	396.051	393.191	125.970	136.161	134.770	103.132	103.861
BELLSOUTH CORP	BLS	496.243	496.087	493.793	486.698	481.972	134.494	102.872	106.266	88.838	100.221
CENTURY TELEPHONE ENTERPRISE	CTL	53.574	51.295	32.833	31.365	30.834	24.448	31.771	19.801	10.031	11.945
CINCINNATI BELL INC	CSN	65.948	64.982	61.955	61.595	60.937	11.522	15.872	12.503	12.121	10.322
FRONTIER CORP	FRO	73.161	33.968	33.319	31.843	28.861	26.195	9.927	8.319	7.010	8.004
GTE CORP	GTE	965.085	951.762	939.530	888.907	669.392	357.355	292.909	287.960	298.456	242.835
LINCOLN TELECOMMUNICATIONS	LTEC	32.348	16.488	16.335	16.422	16.467	12.482	6.246	5.333	3.944	3.755
MCI COMMUNICATIONS	MCIC	680.000	541.000	263.000	259.000	254.000	773.084	783.086	299.995	363.781	572.181
NYNEX CORP	NYN	423.597	414.885	206.824	203.724	200.096	153.105	141.789	62.521	62.370	82.370
PACIFIC TELECOM INC	PTCM	39.620	39.609	39.545	39.487	39.408	4.378	3.645	3.284	3.076	2.817
PACIFIC TELESIS GROUP	PAC	424.065	423.059	405.092	401.018	399.459	202.877	181.813	128.073	112.334	121.710
SBC COMMUNICATIONS INC	SBC	609.082	600.234	299.873	300.158	299.869	185.578	161.593	88.551	91.590	93.292
SOUTHERN NEW ENG TELECOMM	SNG	64.506	63.850	63.359	62.632	62.040	14.968	20.046	15.370	13.410	22.110
SPRINT CORP	FON	348.300	343.400	220.659	218.163	214.935	222.028	187.477	135.276	140.942	193.720
TELEPHONE & DATA	TDS	54.824	50.385	41.247	34.964	30.317	25.313	22.696	17.538	13.513	10.365
U S WEST INC	USW	469.343	441.140	414.462	409.936	393.493	193.206	165.130	108.728	117.640	115.005
TOTAL		7,544.331	6,781.402	5,668.137	5,497.140	5,010.959	3,168.053	2,873.402	1,944.344	1,976.617	2,197.835
SUMMARY STATISTICS											
COUNT		19	19	19	19	19	19	19	19	19	19
SUM		7,544.331	6,781.402	5,668.137	5,497.140	5,010.959	3,168.053	2,873.402	1,944.344	1,976.617	2,197.835
MINIMUM		32.348	16.488	16.335	16.422	16.467	4.378	3.645	3.284	3.076	2.817
MAXIMUM		1,569.006	1,352.398	1,339.831	1,309.352	1,092.143	773.084	783.086	428.910	457.365	572.181
AVERAGE		397.070	356.916	298.323	289.323	263.735	166.740	151.232	102.334	104.032	115.676
MEDIAN		423.597	343.400	220.659	218.163	214.935	133.313	102.872	62.521	62.370	82.370
STD		389.451	349.095	341.615	331.085	273.811	197.795	192.919	118.003	130.502	151.448

APPENDIX I
Exhibit 4

TELEPHONE SHARE TURNOVER DATA

COMPANY	TICKER	SHARE TURNOVER 1994	1993	1992	1991	1990
ALLTEL CORP	AT	0.285	0.278	0.266	0.233	0.310
AMERITECH CORP	AIT	0.242	0.318	0.209	0.220	0.236
AT&T CORP	T	0.328	0.348	0.320	0.349	0.381
BELL ATLANTIC CORP	BEL	0.289	0.312	0.311	0.260	0.264
BELLSOUTH CORP	BLS	0.271	0.207	0.215	0.183	0.208
CENTURY TELEPHONE ENTERPRISE	CTL	0.456	0.619	0.603	0.320	0.387
CINCINNATI BELL INC	CSN	0.175	0.244	0.202	0.197	0.169
FRONTIER CORP	FRO	0.358	0.292	0.250	0.220	0.277
GTE CORP	GTE	0.370	0.308	0.306	0.336	0.363
LINCOLN TELECOMMUNICATIONS	LTEC	0.386	0.379	0.326	0.240	0.228
MCI COMMUNICATIONS	MCIC	1.137	1.447	1.141	1.405	2.253
NYNEX CORP	NYN	0.361	0.342	0.302	0.306	0.412
PACIFIC TELECOM INC	PTCM	0.110	0.092	0.083	0.078	0.071
PACIFIC TELESIS GROUP	PAC	0.478	0.430	0.316	0.280	0.305
SBC COMMUNICATIONS INC	SBC	0.305	0.269	0.295	0.305	0.311
SOUTHERN NEW ENG TELECOMM	SNG	0.232	0.314	0.243	0.214	0.356
SPRINT CORP	FON	0.637	0.546	0.613	0.646	0.901
TELEPHONE & DATA	TDS	0.462	0.450	0.425	0.386	0.342
U S WEST INC	USW	0.412	0.374	0.262	0.287	0.292
TOTAL		0.420	0.424	0.343	0.360	0.439
SUMMARY STATISTICS						
COUNT		19	19	19	19	19
SUM		7.294	7.569	6.688	6.465	8.066
MINIMUM		0.110	0.092	0.083	0.078	0.071
MAXIMUM		1.137	1.447	1.141	1.405	2.253
AVERAGE		0.384	0.398	0.352	0.340	0.425
MEDIAN		0.358	0.318	0.302	0.280	0.310
STD		0.218	0.280	0.229	0.281	0.472

APPENDIX I
Exhibit 4

BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF U S WEST COMMUNICATIONS, INC., A COLORADO CORPORATION, FOR A HEARING TO DETERMINE THE EARNINGS OF THE COMPANY, THE FAIR VALUE OF THE COMPANY FOR RATEMAKING PURPOSES, TO FIX A JUST AND REASONABLE RATE OF RETURN THEREON, AND TO APPPROVE RATE SCHEDULES DESIGNED TO DEVELOP SUCH RETURN.	)	DOCKET NO. T-01051B-99-0105

EXHIBITS

OF

PETER C. CUMMINGS

QWEST CORPORATION

August 21, 2000

INDUSTRY GROUP BETAS

TIC		Value Line	Merrill Lynch	Avg Beta	Notes:
	Electric Companies				
AYE	Allegheny	0.60		0.60	
LNT	Alliant Energy Corp	NMF			
AEE	Ameren Corp	0.55	0.42	0.49	
CNL	CLECO Corp	0.50		0.50	
CEG	Constellation (Baltimore Gas & Electric)	0.50	0.48	0.49	
CPL	Carolina Power & Light	0.55	0.47	0.51	Now CP&L Energy Inc
ED	Consolidated Edison	0.55	0.48	0.52	
DTE	DTE Energy	0.60	0.32	0.46	
DTE	Dominion Resources	0.55	0.44	0.50	
DUK	Duke Energy	0.50	0.36	0.43	
EIX	Edison International	0.65	0.28	0.47	
NEG	EnergyEast (NYSEG)	0.60	0.45	0.53	
FPL	Florida Power & Light	0.45	0.44	0.45	Now FPL Group Inc
FPC	Florida Progress Co.	0.45		0.45	
HE	Hawaiian Electric Industries	0.50	0.43	0.47	
KLT	Kansas City Power & Light	0.60		0.60	
LGE	LG & E Energy	0.60		0.60	
MDSN	Madison Gas & Electric	0.45		0.45	
NCE	New Century Energies	0.50	0.40	0.45	
NSP	Northern States Power	0.55	0.54	0.55	
OGE	OGE Energy (Oklahoma G&E)	0.45	0.39	0.42	
OTTR	Otter Tail Power	0.60		0.60	
PCG	PG&E Corp (Pacific Gas & Electric)	0.45	0.36	0.41	
POM	Potomac Electric Power Corp. (PEPCO)	0.50	0.45	0.48	
PPL	PP&L Resources	0.60	0.49	0.55	
REI	Reliant Energy	0.60	0.50	0.55	
SRE	Sempra Energy	0.50		0.50	
SCG	SCANA Corp	0.45		0.45	
TE	TECO Energy (Tampa Electric)	0.50	0.44	0.47	
WR	Western Resources	0.30		0.30	
WEC	Wisconisn Energy (WEPCO)	0.50	0.46	0.48	
WPS	WPS Resources (Wisc. Pub. Serv.)	0.55		0.55	
	Average	**0.52**	**0.43**	**0.49**	
	Gas Distribution Companies				
ATG	AGL Resources	0.60	0.65	0.63	
ATO	Atmos Energy Corp	0.55	0.46	0.51	
CGC	Cascade Natural Gas Corp	0.55	0.40	0.48	
NJR	New Jersey Resources	0.55	0.63	0.59	
NWNG	Northwest Natural Gas	0.60	0.45	0.53	
PNY	Piedmont Natural Gas	0.60	0.54	0.57	
SJI	South Jersey Industries	0.50	0.52	0.51	
	Average	**0.56**	**0.52**	**0.55**	

INDUSTRY GROUP BETAS

TIC		Value Line	Merrill Lynch	Avg Beta	Notes:
	Telcos				
VZ	Verizon	0.85	0.87	0.86	Avg of BEL & GTE 6/30/00
BLS	BellSouth	0.85	0.69	0.77	
SBC	SBC Communications	0.85	0.90	0.88	
CZN	Citizens Communications	0.70		0.70	
CTL	CenturyTel	0.95	1.04	1.00	
TDS	Telephone & Data Systems	0.70	0.90	0.80	
	Average	**0.82**	**0.88**	**0.84**	
	Insurance Companies				
BKLY	Berkley (W. R.)	0.85	0.84	0.85	
CB	Chubb Corp	1.20	1.06	1.13	
CINF	Cincinnati Financial Group	0.80		0.80	
OCAS	Ohio Casualty Corp	0.80		0.80	
SAFC	SAFECO Corp	1.10	0.90	1.00	
SPC	St. Paul Cos	1.05	1.03	1.04	
SIGI	Selective Insurance	0.65	0.61	0.63	
TRH	Transatlantic Holding	0.70		0.70	
AIG	American International Group	1.40		1.40	
UNIT	Unitrin Inc	0.80		0.80	
	Average	**0.94**	**0.89**	**0.92**	
	Interexchange Carriers				
AT	ALLTEL	0.75	0.75	0.75	
T	AT&T	0.95	0.98	0.97	
Q	Qwest	1.60		1.60	
WCOM	WorldCom	NMF	1.17	1.17	
LVLT	Level 3	NMF			
	Average	**1.10**	**0.97**	**1.12**	
	Competitive Local Exchange Carriers				
ALGX	Allegiance Tele	NMF	2.07	2.07	
ELIX	ELI (Electric Lightwave)	1.65		1.65	
MCLD	McLeodUSA	1.35	1.05	1.20	
NXLK	NEXTLINK	1.45		1.45	
	Average	**1.48**	**1.56**	**1.59**	

Sources: Merrill Lynch Quantitative Profiles, July 2000.
Value Line Investment Survey, August 11, 2000.
Value Line Investment Survey - Expanded Edition, August 11, 2000.

DCF COST OF EQUITY CAPITAL
TELECOMMUNICATIONS COMPANIES

(Using Data from Hill Schedules 5 and 6)

COMPANY	DIVIDEND YIELD Schedule 6	ANALYSTS GROWTH RATE Schedule 5	DCF COST OF EQUITY CAPITAL
Bell Atlantic	3.16%	11.39%	14.55%
BellSouth	1.63%	11.38%	13.01%
GTE	2.95%	11.90%	14.85%
SBC	2.31%	12.99%	15.30%
		AVERAGE	**14.43%**
		STANDARD DEVIATION	**0.99%**

DCF COST OF EQUITY CAPITAL
INSURANCE COMPANIES
(Using Data from Hill Schedules 5 and 6)

COMPANY	DIVIDEND YIELD Schedule 6	ANALYSTS GROWTH RATE Schedule 5	DCF COST OF EQUITY CAPITAL
W.R. Berkley	2.40%	14.00%	16.40%
Chubb Corp	2.00%	11.78%	13.78%
Cincinnati Financial	1.91%	10.00%	11.91%
Ohio Casualty	6.91%	10.00%	16.91%
SAFECO	6.81%	9.38%	16.19%
St. Paul Cos	2.95%	10.07%	13.02%
Selective Ins Group	3.16%	9.00%	12.16%
Transatlantic Holdings	0.58%	9.00%	9.58%
American International Group	0.12%	14.30%	14.42%
Unitrin	4.62%	n/a	n/a
		AVERAGE	**13.82%**
		STANDARD DEVIATION	**2.43%**

DCF COST OF EQUITY CAPITAL
GAS DISTRIBUTION COMPANIES
(Using Data from Hill Schedules 5 and 6)

COMPANY	DIVIDEND YIELD Schedule 6	ANALYSTS GROWTH RATE *Schedule 5*	DCF COST OF EQUITY CAPITAL
AGL Resources	6.49%	5.37%	11.86%
Atmos Energy Corp	6.90%	7.33%	14.23%
Cascade Natural Gas	5.66%	4.67%	10.33%
New Jersey Resources	4.33%	6.63%	10.96%
Northwest Natural Gas	5.78%	4.02%	9.80%
Piedmont Natural Gas	5.05%	5.57%	10.62%
South Jersey Industries	5.61%	5.25%	10.86%
		AVERAGE	**11.24%**
		STANDARD DEVIATION	**1.46%**

BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF U S WEST COMMUNICATIONS, INC., A COLORADO CORPORATION, FOR A HEARING TO DETERMINE THE EARNINGS OF THE COMPANY, THE FAIR VALUE OF THE COMPANY FOR RATEMAKING PURPOSES, TO FIX A JUST AND REASONABLE RATE OF RETURN THEREON, AND TO APPPROVE RATE SCHEDULES DESIGNED TO DEVELOP SUCH RETURN.	)	**DOCKET NO. T-1051B-99-105**

STATE OF WASHINGTON)
: ss AFFIDAVIT OF PETER C. CUMMINGS
COUNTY OF KING)

Peter C. Cummings, of lawful age being first duly sworn, depose and states:

1. My name is Peter C. Cummings. I am Director – Finance & Economic Analysis of Qwest Corporation in Seattle, Washington. I have caused to be filed written testimony and exhibits in support of U S WEST Communications, Inc. (Now Qwest Corporation) in Docket No. T-01051B-99-105.

2. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct to the best of my knowledge and belief.

Peter C. Cummings

SUBSCRIBED AND SWORN to before me this 17th day of August, 2000.

Notary Public residing at Seattle, Washington.

NOTARY PUBLIC
COMMISSION EXPIRES 8-08-02
STATE OF WASHINGTON

My Commission Expires: 8/8/02

BEFORE THE

ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF U S WEST COMMUNICATIONS, INC. A COLORADO CORPORATION, FOR A HEARING TO DETERMINE THE EARNINGS OF THE COMPANY FOR RATEMAKING PURPOSES, TO FIX A JUST AND REASONABLE RATE OF RETURN THEREON AND TO APPROVE RATE SCHEDULES	)	DOCKET NO. T-01051B-99-0105

REBUTTAL TESTIMONY OF

JERROLD L. THOMPSON

EXECUTIVE DIRECTOR- SERVICE COST INFORMATION

QWEST CORPORATION

AUGUST 21, 2000

REBUTTAL TESTIMONY OF JERROLD L. THOMPSON

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IDENTIFICATION OF WITNESS

Q. PLEASE STATE YOUR NAME, OCCUPATION AND BUSINESS ADDRESS.

A. My name is Jerrold L. Thompson. I am employed by Qwest Corporation (formerly U S WEST Communications, Inc.), (Qwest) as Executive Director - Service Cost Information. My business address is Room 4400, 1801 California Street, Denver, CO.

Q. HAVE YOU PREVIOUSLY FILED TESTIMONY IN THIS PROCEEDING?

A. Yes. I provided Direct Testimony on January 8, 1999 and Supplemental Direct Testimony on May 19, 2000.

PURPOSE OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. My testimony rebuts the testimonies of Mr. William Dunkel representing the staff of the Arizona Corporation Commission, Dr. Ben Johnson representing RUCO staff, Dr. Michael Ileo representing the Arizona Payphone Association, and Ms. Arlene Starr of AT&T. I provide a background for the Total Service Long Run Incremental Cost (TSLRIC) studies that have been filed in this proceeding[1]. My rebuttal testimony provides an overview of the economic principles considered in the studies, describes the cost calculation procedures followed in the studies, and responds to the various erroneous statements made and conclusions reached by the aforementioned parties.

Q. HOW IS YOUR TESTIMONY ORGANIZED?

A. My testimony is organized into four major sections. First, I describe the cost principles used in Qwest's TSLRIC studies. Second, I describe the

[1] TSLRIC studies were updated with my Supplemental Testimony.

categorization of costs within the studies. Third, I discuss the appropriate uses of TSLRIC data. Finally, I address the testimony of the witnesses listed above and explain why their testimony is incorrect and provide misinformation to the Commission.

TSLRIC PRINCIPLES

Q. PLEASE SUMMARIZE THE ECONOMIC PRINCIPLES THAT ARE APPLIED IN QWEST'S TSLRIC STUDIES.

A. Qwest's Total Service Long Run Incremental Cost (TSLRIC) studies identify the *forward looking, long run* incremental costs that are *directly caused* by offering a service or group of services. The description used in Qwest's cost studies for TSLRIC is *Total Direct* costs. The assumptions, methods, and procedures used in Qwest cost studies are designed to yield the long run forward-looking *replacement* costs of reproducing the telecommunications network, considering the most efficient *least cost* technologies currently available.

Q. DO THE QWEST STUDIES FOLLOW THE FUNDAMENTAL PRINCIPLE OF COST CAUSATION?

A. Yes, as discussed in the testimony of Dr. William E. Taylor[2], Qwest TSLRIC studies follow the important principle of cost causation. If the establishment of a service causes an investment to be made, or an expense to be incurred, these costs are included in the study for the service. When costs are incurred because of a service they are considered to be caused by the service.

[2] Rebuttal Testimony of Dr. William E. Taylor at 15.

TSLRIC COST CATEGORIES

Q. HOW ARE COSTS DISPLAYED IN THE TSLRIC STUDIES THAT QWEST IS FILING IN THIS PROCEEDING?

A. The Qwest TSLRIC studies filed in this proceeding identify costs on a unitized basis (e.g., per minute of use, or per circuit) and disaggregate the cost results into the following cost categories: Total Direct Costs, and Network Support Costs[3].

Q. PLEASE DEFINE "TOTAL DIRECT COSTS."

A. *Total Direct Costs* are the forward-looking costs that are caused by offering the service in the long run. These costs would not be incurred if the service were not offered. *Total Direct Costs* reflect the per-unit forward looking cost associated with providing the entire service in the most efficient manner, holding constant the production of all other services produced by the firm. In a recurring cost study, *Total Direct Costs* include the capital costs (e.g., depreciation, cost of money, income taxes) and maintenance costs associated with the investment required to provision a service, along with other service-specific costs such as product management expense.

Total Direct Costs are equivalent to the Total Service Long Run Incremental Cost (TSLRIC) of a service.

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[3] The cost studies also include categories of "Attributable" and "Common"that are provided as comparative information to TELRIC studies that have those additional indirect allocations. The term "Fully Allocated" is used to describe the summation of Direct, Network Support, Attributable, and Common costs.

Q. PLEASE DEFINE "NETWORK SUPPORT COSTS."

A. *Network Support Costs* include network administration and engineering costs. These costs are not directly associated with a single service, but are generally caused by the provision of a group of services.

USE OF TSLRIC DATA

Q. HOW SHOULD TSLRIC DATA BE USED?

A. The information provided in the Qwest TSLRIC studies should be used as one input in the pricing process. For example, as discussed in the testimony of Dr. Taylor, a service is considered as not *receiving* a subsidy, if the price of the service is at or above its Direct Cost, or TSLRIC. Therefore the Direct Cost should be used as a *price floor* of a service. On the other hand, from the perspective of Qwest's long term financial viability, all costs- incremental and historical, need to be recovered.

While the TSLRIC may be useful in determining whether the direct revenues from a service cover the direct costs, TSLRIC by itself does not provide any information as to whether the service covers its proportionate share of shared costs (i.e., network support), or the contribution required from services to allow a fair return on its fair value rate base. The level of recovery of these costs should be based upon market demand and other factors, as discussed by other Qwest witnesses, in determining actual prices.

Q. WOULD YOU PLEASE CLARIFY THE PURPOSE OF THE TSLRIC STUDIES?

A. The purpose of TSLRIC studies is to provide information to be used as a price floor for retail services. My earlier testimony discussed the use of TSLRIC to avoid cross-subsidies. Said a different way, in a competitive environment, if one provider were to price its retail services below TSLRIC for a substantial period of time, other providers could find it difficult to compete. Therefore, the TSLRIC of the services provides the minimum level that prices should be set in a competitive market.

REBUTTAL OF MR. DUNKEL

A. COST VS. COST RECOVERY

Q. DO YOU HAVE SOME GENERAL OBSERVATIONS ABOUT MR. DUNKEL'S TESTIMONY?

A. Yes. *Costs* are the cash outlays Qwest incurs to provide a service. *Cost recovery* or price is the cash inflow Qwest receives for providing the service. Mr. Dunkel frequently confuses these two simple concepts. With a normal commercial transaction, customers are charged a price for *what* they use, not *how* they choose to use it. *What* price they are charged is based on the supplier's cost of providing the service. My expectation as a consumer, is that if I purchase a service I expect to be charged based on the supplier's cost, not

charged based upon how I choose to *use* the service. For example, I buy gasoline at a given price regardless of whether I have a compact car or a sport utility vehicle, regardless of whether I use the fuel to commute to work or to go on a vacation. Mr. Dunkel's view is apparently that prices should be based not on what customers receive when they are provided access to the network, but rather on how customers choose to use that access.

It is generally accepted that the ***cost*** of the loop does not vary with the ***use*** of the loop (i.e., using it to place local calls, intrastate long distance calls, or interstate long distance calls does not change the cost of the loop). If the cost does not change based upon usage, it is illogical to have the rate design based on prices that recover the non-usage based cost on usage services. To do so creates numerous economic disincentives and practical problems, as explained in the testimony of Dr. Taylor.

Q WHAT ARE THE DETERMINANTS OF THE COST OF THE LOOP?

A. Loop costs do vary. They vary by the number of customers and the location of the customers. In other words, loop costs are determined by (1) the length of the loop from the central office to the customer location; and (2) the number of customers that are located in proximity with one another. In industry terminology these two determinants are referred to as distance and density. The common characteristic of these two determinants is that they are related to where **customers** are, not how the customers use the loop.

B. THE COST OF THE LOOP IS NOT A SHARED COST

Q. MR. DUNKEL DISCUSSES HIS VIEW THAT THE COST OF THE LOOP IS A SHARED COST. IS THIS VIEW CORRECT?

A. It is not correct. As Dr. Taylor explains, economically proper cost analysis attributes the costs ***caused*** by the service to that service. Causation of costs must be viewed from the perspective of the supplier, (in this case Qwest), not viewed from the perspective of the consumer. Mr. Dunkel's conclusion that the loop is "shared" comes from the perspective of the consumer. Mr. Dunkel's view of the loop cost as "shared" is based on the faulty notion that because customers may ***use*** the loop for multiple services, the loop facility should be considered a shared cost. In fact, when Mr. Dunkel uses the term "shared", he really means "shared *use*"[4].

As explained by Dr. Taylor, *Service-specific fixed costs* are those associated with the supply of a particular service. A firm supplying *any* level of that service would incur these costs, but would avoid those costs altogether by ceasing production of the service. TSLRIC studies include service-specific fixed costs. The loop is a service-specific fixed cost. The cost of the loop is associated with the service of supplying network access to the customer. Access to the network is the first service generally provided to Qwest's customers. Once a customer has access to the network, the customer has the choice of how to use the network, when to use the network, or whether to not use the network.

The customer's request, or anticipated request, for ***access*** to Qwest's network is the reason that Qwest incurs the cost of constructing and placing the loop[5].

[4] See Dunkel Rate Design; Direct, p.40, Line 10.
[5] Mr. Dunkel's view is that the investment decision "...was directly made by a telephone executive"(Direct, p.47, l.

Regardless of the intent of the customer to use the line only for incoming calls, only for outgoing calls, only for Internet access, or only in case of emergencies, the cost is not attributable to other actions of the customer, or **shared** by other services. For example, Customer A could use the loop for all of these services and Customer B could only use it for only incoming calls, and the cost of their respective loops would not change. Since Qwest would not incur any more loop cost for Customer A, nor any less loop cost for Customer B, attributing the cost of the loop to the customer's usage based services is not cost causative and should not be treated as such in TSLRIC studies.

Q. MR. DUNKEL APPEARS TO BELIEVE THAT THE COST OF THE LOOP SHOULD BE RECOVERED FROM VARIOUS USAGE BASED SERVICES AS A SHARED COST. WOULDN'T THE EFFECT OF THIS VIEW HAVE THE SAME RESULT AS ALLOCATING THE LOOP COST TO VARIOUS USAGE BASED SERVICES?

A. Yes. Arbitrary recovery of the loop cost from usage based services has the same result as arbitrary allocation of the loop cost to, and recovering it from, those services. Either way, it is economically incorrect. As explained in Dr. Taylor's testimony, allocation of the loop cost (or cost recovery) would not appropriately reflect cost-causation of the services. Because it does not properly reflect cost-causation it would provide improper cost floor information for the Commission. As I have said, the fundamental principle that is used in TSLRIC studies is to base the costs on cost-causation.

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9), based on a desire to obtain revenues. If there was no expectation of the executive to obtain revenue from the customer, the cost would not have been incurred.

Q. IN ELABORATION OF THE ECONOMIC CONCERNS, IS THERE A PRACTICAL EXAMPLE OF THE PROBLEM WITH RECOVERING A SIGNIFICANT NON-USAGE COST ON A USAGE BASIS?

A. Yes. When a significant non-usage cost such as the loop is recovered primarily from usage based services, high usage customers could easily pay more than the cost Qwest incurs to provide them the loop. This creates the perception by the customer that his cost is higher than it actually is. In a competitive market, an alternative facility based supplier of loops could propose a cost to the customer that appears to be lower, but in actuality, may be higher than the cost Qwest incurs to provide the loop for that customer. Because the customer is charged on a usage basis for the loop from Qwest, the customer may make the choice to move his service to Qwest's competitor, thereby stranding the loop originally provided. If this customer choice were made because the competitor's loop was actually less costly, the result is expected and reasonable in a competitive market. However, if the competitor's loop was more costly and the decision was made solely on the customer's perception of the usage price, then the result is improper and should not occur.

C. NETWORK ACCESS IS A SEPARATE SERVICE BUNDLED WITH BASIC SERVICE USAGE

Q. HOW SHOULD THE COSTS OF BASIC SERVICE BE VIEWED?

A. The costs of Basic Service should be viewed as consisting of two services, access and usage. The act of providing access to the customer is the cause of

the loop cost, so that cost should be attributed to network access. Network access is an element of basic service, residential and business. Flat rated basic residential service bundles network access with an assumed level of local usage. Therefore, while not always obvious, residential basic service is comprised of network access and local usage. An examination of the current local business service tariff and the Low Use Option clearly identify these two components and are good illustrations of the true nature of local service.

Qwest's Exchange and Network Services Tariff, 5.2.3 Dial Tone Line provides the following description:

> The term "dial tone line" applies to certain individual business lines. This service entitles customers to **access** the telecommunications network for a stipulated monthly charge. (Emphasis added.)

The business customer is charged the dial tone rate plus an additional rate for usage[6]. This structure represents the true nature of the basic service when it is bundled as network access plus local usage. Qwest's TSLRIC studies reflect these same components for basic service. The Low Use Option has a similar rate structure to basic business. There is a flat monthly charge plus a charge per message completed. The monthly charge is related to the network access provided to the customer, and the message charge is related to the use of the network.

The "network access plus usage" view of basic service is comparable to the view of network access plus Qwest's long distance usage. The customer pays for

[6] This tariff structure is proposed to be collapsed into one rate element in this proceeding, but nevertheless illustrates the concept of two separate services that are bundled together for residential service.

access to the network, and then chooses to make long distance calls on the network.

Staff, as represented by Mr. Dunkel, has accepted the proposal to bundle network access and usage for business rates.[7] In addition, Mr. Dunkel has endorsed the "network access plus usage" view of basic service for Low Use customers.[8] By endorsing these rate structures, Mr. Dunkel has endorsed the "network access plus usage" view of basic service. It is inconsistent for Staff to endorse the "network access plus usage" view as appropriate for rate design, but disagree when that same view is used in Qwest's TSLRIC studies.

Q. HAS THE FCC PROVIDED SUPPORT FOR THE ISSUE OF VIEWING LOCAL SERVICE AS COMPRISED OF THE TWO COMPONENTS OF NETWORK ACCESS AND LOCAL USAGE?

A. Yes. In its First Report and Order on Universal Service the FCC examined the services eligible for federal universal service support. The FCC took this same view of **access to** and **use of** the network in its decision on Universal Service[9]. The FCC stated, "We find that both access to and use of the public switched network at rates that are 'just, reasonable and affordable,' are necessary to promote the principles embodied in section 254(b)(1)[10]" [of the Telecom Act of 1996].

In addition, in its First Report and Order the FCC states:

[7] Dunkel, page 78.
[8] Dunkel, pages 67-69.
[9] Although the FCC calls access to these Technically,
[10] First Report and Order, CC Docket 96-45, Released May 8, 1997, at 66.

> Incremental costs are the additional costs (usually expressed as a cost per unit) that a firm will incur as a result of expanding the output of a good or service by producing an additional quantity of the good or service. Incremental costs are forward-looking in the sense that these costs are incurred as the output level changes by a given increment. The costs that are considered incremental will vary greatly depending on the size of the increment. For example, the incremental cost of carrying an additional call from a residence that is already connected to the network to its end office is virtually zero. **The incremental cost of connecting a new residence to its end office, however, is the cost of the loop....**[11] (Emphasis added.)

D. FLAT RATE RECOVERY OF LOOP COSTS

Q. WHY IS IT APPROPRIATE TO RECOVER THE COST OF A LOOP FROM BASIC EXCHANGE SERVICES?

A. As has been discussed, the cost of a loop does not change with usage. Qwest incurs the cost to construct a line or loop and connect it to the customer. Once this is done, except for maintenance, there is no additional cost. However, Qwest is entitled to recover its investment in providing this connection. Traditional cost studies use an amortization method of recovering the loop cost over its depreciable life, and earn a fair return on the un-depreciated investment and other related costs until the investment is recovered. This amortization, not unlike a payment on a loan, results in a constant amount of cost recovery per month. Appropriate recovery of this flat-per-month cost is through a flat-charge to the customer per-month. This is the cost recovery method that is used for local service and other basic services. For example, if a customer subscribes to

[11] First Report and Order, CC Docket 96-98, 95-185, Released August 8, 1996, at 675.

Low Use Option service, the customer is charged a flat-rate per month plus a charge per message[12] for the use that is made of the network. If the customer subscribes to flat residence exchange service, an assumed level of use is charged, along with per-line-per-month charge for the loop. The cost related to both Low Use service and flat basic service is nearly identical except for usage quantity. There is no *allocation* of the loop to basic exchange service, the cost of the loop is the entire direct cost of providing network access that is bundled into basic residential exchange services.

Q. HAS THE FCC PROVIDED INFORMATION THAT SUPPORTS FLAT RATE RECOVERY OF THE LOOP COST?

A. Yes. In its First Report and Order, the FCC stated:

> Most loop costs are associated with a single customer. Outside plant between customer's premises and ports on incumbent LEC switches is typically either physically separate for each individual customer, or has costs that can easily be apportioned among users. **We therefore conclude that costs associated with unbundled loops should be recovered on a flat-rated basis.** Usage-based rates for an unbundled loop would most likely translate into usage-based rates for new entrant's retail local customers. **A retail usage-based rate would distort incentives for efficient use**. Customers that had to pay a usage charge would have an incentive not to use the network in situations where the benefit of using the network exceeds the true cost of using the network. Usage-based loop prices would put an entrant at an artificial cost disadvantage when competing for high-volume customers.[13] (Emphasis added.)

[12] The message charge is proposed to change to a per minute charge, but is still usage based.
[13] First Report and Order, at 789.

Recovering the cost of the loop from usage based services, as proposed by Mr. Dunkel[14], has the same effect as having usage-based loop prices, putting Qwest at an artificial cost disadvantage, especially when competing for high-volume customers.

E. INTERSTATE RATE BASE ALLOCATIONS

Q. DO YOU AGREE, AS MR. DUNKEL STATES, THAT THE SUPREME COURT AND THE FCC REQUIRE JURISDICTIONAL ALLOCATION OF THE LOOP FOR SEPARATIONS PURPOSES?

A. Yes. U. S. Supreme Court decisions and FCC rules require that under rate base rate-of-return, accounting revenue requirements need to recognize the two separate regulatory jurisdictions (interstate and intrastate). Qwest has followed those requirements in its revenue requirement filed in this proceeding. For the historical loop investment, 25% has been allocated to the interstate jurisdiction pursuant with the FCC's rules. This 25% has been subtracted from Qwest's total historical accounts leaving the intrastate accounting amounts for consideration by this Commission.

Q. SHOULD THE SAME 25% ALLOCATION PROCESS BE USED FOR TSLRIC STUDIES?

A. No. The Separations process is a mechanism to determine historical costs for each of the two jurisdictions that regulate Qwest's prices: interstate-FCC and intrastate-ACC. Economic costs are determined independently of the regulatory

[14] See for example, Mr. Dunkel's discussion of IntraLATA toll service, p. 84.

jurisdiction in which the service happens to fall. Prices for interstate services provide recovery for the interstate revenue requirements, as I have explained above. This regulatory mechanism for recovery of interstate revenue requirements should not be confused with the identification of economic forward looking costs. Certain interstate rates can be viewed as providing contribution toward recovery of the economic cost of the loop and should be considered in a contribution analysis to properly reflect cost recovery and thereby address the issue of "double recovery" raised by Mr. Dunkel.

F. STATE COMMISSION DECISIONS

Q. MR. DUNKEL QUOTES SEVERAL STATE COMMISSIONS THAT HAVE FOUND THAT THE LOOP COST SHOULD BE ALLOCATED TO USAGE SERVICES. SHOULD THE ARIZONA CORPORATION COMMISSION BE SWAYED BY THESE DECISIONS?

A. No. The state commission decisions quoted by Mr. Dunkel, with one exception[15], were all rendered prior to the Telecom Act of 1996: Utah – 1995, Iowa – 1989 and 1994, Washington – 1995, Colorado – 1987, and New Hampshire - 1991. The significance of these pre-Telecom Act decisions is that they were made in an environment that was more of a monopoly than today. The FCC quotes the Joint Explanatory Statement of the Committee of the Conference, explaining the intent of Congress in the Telecom Act, where "any support mechanisms continued or created under new section 254 should be explicit, rather than implicit as many

[15] The exception is Washington, April 1996 shortly after the passage of the Act. Another quote from the Indiana commission, October 1998, appears to address "takings" issues related to the 5th Amendment to the Constitution, rather than rate making issues as in this proceeding.

support mechanisms are today."[16] These pre-Telecom Act decisions have in common their reliance upon the notion of ***use*** of the loop as a basis for an equitable allocation of the loop cost.[17] The intent in each of these past decisions was to continue the universal service implicit subsidies in intrastate rates that rely upon a usage based allocation of the **non-usage** cost of the loop. Because of the changes required and created by the Telecom Act, these past views of recovery of the loop cost are antiquated.

REBUTTAL OF DR. JOHNSON

Q. DOES DR. JOHNSON DISAGREE WITH QWEST'S TSLRIC STUDIES FOR BASIC SERVICE?

A. Yes, Dr. Johnson takes the same view of the loop and port costs as Mr. Dunkel. He states that he believes that those costs are shared and should not be included 100% in TSLRIC studies for basic services.[18] He provides a discussion of this view and offers calculations that allocate the loop to services. The rebuttal testimony I provide for Mr. Dunkel's testimony is equally applicable in response to the testimony of Dr. Johnson on this subject and it is not necessary to repeat it.

[16] FCC Universal Service, First Report and Order, at 9.
[17] Utah "...use of toll services", Iowa "...which rely upon it", Washington "...use of that facility", Colorado "...used by all of these users".
[18] Dr. Johnson Rebuttal, page 50.

Q. DR. JOHNSON MAKES A POINT THAT THE TSLRIC STUDIES NEED TO BE COMPARED TO THE PROPER TYPES OF REVENUE. WHAT IS YOUR RESPONSE TO THIS PERSPECTIVE?

A. Dr. Johnson states that it is misleading to compare Qwest's TSLRIC study for basic exchange service to only basic exchange rates.[19] Based on Dr. Johnson's view of the loop as a shared cost, he disagrees with the fact that Qwest's TSLRIC studies did not "assign" loop costs to "other services that use the loop." As Dr. Taylor testifies, this proposed assignment is economically incorrect. In addition, since many of the services identified as "benefiting" from network access, are usage based services, Dr. Johnson's view of assigning the non-traffic sensitive cost of the loop to these services results in the incorrect matching of costs and cost recovery I discussed earlier in my testimony.

Q. IN HIS DISCUSSION OF SUBSIDY, DR. JOHNSON DESCRIBES A TSLRIC ANALYSIS THAT INCLUDES THE COST OF THE LOOP AND THE PORT. IS HIS DESCRIPTION CONSISTENT WITH THE DEFINITION OF TSLRIC?

A. No. As discussed by Dr. Taylor, TSLRIC is a study of an incremental cost where the increment of output in question is the total volume of a service, hence the first two words of the TSLRIC acronym are "Total Service".[20] Dr. Johnson states, "For example, one can meaningfully compare the incremental 'costs' of adding another residence customer to the network (including the cost of the loop and port) with the incremental revenues that will be generated by the presence of that customer." This is not a description of a TSLRIC study. TSLRIC quantities are

[19] Johnson page 52.

[20] This definition is also used by the Arizona Corporation Commission's Rules and Regulations, Section R14-2-1102 (17), "The total additional cost incurred by a telecommunications company to produce the entire quantity of a service, given that the telecommunications company already provides all of its other services."(Emphasis added.)

for the total volume of a service, not for one customer. His example is not useful and only acts to confuse the reader.

Q. DOES DR. JOHNSON APPEAR TO AGREE WITH THE VIEW THAT BASIC SERVICE IS A BUNDLE OF NETWORK ACCESS AND USAGE?

A. Yes. He appears to agree with that view, although he disagrees with the comparison of those costs to only exchange service revenue.[21] If my reading of his testimony is correct, then it seems that his issue is not necessarily with Qwest's TSLRIC studies, but rather with its comparison of revenues to the TSLRIC results. In essence, restated in my words, he seems to be emphasizing that the contribution from other services, (i.e., the excess of price over TSLRIC for those other services), be considered as recovering the cost of the loop. If this is an accurate portrayal of his view, I would not disagree that this is the current state of cost recovery for Qwest in Arizona. However, in the emerging competitive market, historic contribution levels from these services are at risk and are unlikely to be sustainable in the long run.

For example, retail prices for many long distance services have declined in the last few years.[22] All indications are that they will continue to decline rather than increase in the future. To the extent loop costs are expected to be recovered from long distance services, that expectation is unlikely to be sustainable for very long. For example, in this proceeding, AT&T is vigorously arguing for switched

[21] Dr. Johnson Direct, page 56.
[22] For example, see David L. Teitzel, Supplemental Direct Testimony page 42.

access rates that do not include any contribution toward recovery of the cost of the loop.[23]

REBUTTAL OF DR. ILEO

Q. DR. ILEO'S TESTIMONY STATES THAT QWEST'S PROPOSED RATES FOR PUBLIC ACCESS LINES ARE UNLAWFUL. DO YOU AGREE?

A. I do not agree. Like Dr. Ileo, I am not an attorney and the conclusion Dr. Ileo has reached is a legal conclusion for which I am unqualified to assess. However, I cannot find any evidence provided by Dr. Ileo that demonstrates how Qwest's rates for Public Access Line (PAL) services violate the law. He states that the PAL rates violate Section 276 of the Telecom Act, but I do not see any evidence presented by Dr. Ileo that supports that legal conclusion.

Q. HAS QWEST PROVIDED EVIDENCE THAT ITS PRICING PROPOSALS FOR PAL SERVICES COMPLY WITH SECTION 276 OF THE TELECOM ACT?

A. Yes, as discussed in the testimony of Mr. McIntyre, Qwest's proposed PAL rates fully comply with Section 276 of the Telecom Act and FCC Orders. Because Dr. Ileo did not provide specifics on how he thinks Qwest's rate proposals are unlawful, it is impossible for me to address his accusations. However, the primary issue raised by Dr. Ileo appears to center around the nature of subsidies because of his often used terms "unlawful subsidies".

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[23] See Arlene Starr Direct Testimony pages 19-21.

Q. CAN YOU DETERMINE WHAT DR. ILEO BELIEVES IS A "SUBSIDY"?

A. Although I disagree that subsidy is an issue with PAL, from the context that Dr. Ileo's testimony is framed, it appears that he believes that any price above a TSLRIC plus common cost level is a "subsidy". I base this conclusion on the level of rates that he proposes, which is his version of TSLRIC plus common costs.

Q. IS THERE DISAGREEMENT WITH DR. ILEO'S APPARENT DEFINITION OF A "SUBSIDY"?

A. My understanding of the test of whether a service is *the source* of a subsidy is when a service is priced above its Stand Alone Cost (SAC). This view is discussed by Staff Witness Thomas Regan.[24] Mr. Regan states: "The proper range for a price is between the TSLRIC price floor and the Stand-Alone price ceiling. This is the range of *subsidy-free* rates where prices should generally fall." (Emphasis added). He further states: "Demonstrating that a service is priced above TSLRIC does not provide sufficient evidence of that service providing a subsidy to other services. Rather, a service must be demonstrated to be priced above its properly calculated Stand-Alone Cost, in order to demonstrate that the service is providing a subsidy to another service...". There appears to be significant disagreement between Mr. Regan and Dr. Ileo on this issue.

[24] Thomas Regan Direct Testimony pages 6-8.

Q. HAS DR. ILEO PRESENTED A STAND-ALONE COST STUDY TO DEMONSTRATE THAT PAL RATES PROVIDE A SUBSIDY?

A. He has not. While I have not had time to examine the adjustments he has proposed to Qwest's TSLRIC study for PAL,[25] nothing he has done could be described as a Stand-Alone Cost study.

Q. DO THE FCC'S RULES REQUIRE QWEST TO UNDERTAKE A STAND-ALONE COST STUDY?

A. No, on the contrary the FCC's rules only require that Qwest pass the FCC's "new services test"as its rules relate to PAL services. Dr. Taylor provides background on this issue. Mr. McIntyre's testimony provides details on Qwest's analysis of this test, but testimony provided by Staff witness Steven V. Le in Docket No. T-01051B-97-0024 ET AL stated:

> As discussed earlier, the FCC's later Orders interpreting the new services test appear to indicate that a range of rates would meet the test. The FCC in its Orders has approved rates under the test between and including zero times direct cost and 4.8 times direct cost as "reasonable".

Q. DOES QWEST'S RATE PROPOSAL FOR PAL SERVICE IN THIS PROCEEDING MEET THIS RANGE OF REASONABILITY?

A. Yes. Based on the information provided by Mr. McIntyre, Qwest's price proposal for PAL services meet this test.

Q. SO, DR. ILEO HAS NOT PROVIDED ANY EVIDENCE THAT QWEST'S PAL RATES ARE UNLAWFUL, HE HAS NOT SUPPORTED HIS INTERPRETATION

[25] Due to the short interval between receipt of Dr. Ileo's Direct Testimony and the date this testimony is required to be filed, I was unable to assess the validity or reasonableness of Dr. Ileo's adjustments. I reserve the opportunity to comment on those adjustments in later rounds of testimony.

OF THE TELECOM ACT REQUIREMENTS, HE HAS PROVIDED NO EVIDENCE OF A SUBSIDY IN THE PROPOSED PAL RATES, AND HE HAS NOT DEMONSTRATED THAT THE PROPOSED RATES FAIL TO MEET THE FCC'S NEW SERVICES TEST. WHAT THEN IS LEFT FOR DR. ILEO TO ARGUE?

A. All that is left is that his clients appear to believe that their rates are too high and that their rates should not be set to recover levels of direct, common, shared and embedded costs that are comparable to that provided by other retail services. Even though the ratio of proposed PAL rates to TSLRIC plus common costs is far less than half of some other services such as Caller ID- Number or Last Call Return, Dr. Ileo proposes rates equal to direct costs or below. The argument presented by Dr. Ileo is that PAL rates should be given preferential treatment over other retail services by dramatically reducing (if not eliminating) contributions over direct cost for PAL services. This is not good public policy and could potentially result in accusations of discrimination by consumers of other services.

Q. DR. ILEO REQUESTS THAT THE COMMISSION CLARIFY THE CALCULATION OF ITS DECISIONS IN THE GENERIC COST DOCKET. IS THERE ANY REASON THAT THE COMMISSION SHOULD DO WHAT DR. ILEO REQUESTS?

A. No. Dr. Ileo has not demonstrated any reason that the Commission should go to through this burdensome task. The information he hopes to attain from this obtrusive investigation would only allow him to further adjust Qwest's TSLRIC studies. There is no reason for these adjustments. There is already evidence

that Qwest has passed the test. The Generic Cost Docket took months to complete with hundreds, if not thousands of pages of testimony, with multiple cost analyses, and exhibits. It would unjustly delay this proceeding for the Commission to put together this information, then require Qwest to attempt to re-create the Commission's decision using its cost models only to provide Dr. Ileo with information that is irrelevant.

REBUTTAL OF MS. STARR

Q. MS. STARR CRITICIZES QWEST FOR OVERSTATING ITS COST STUDIES. ARE HER CRITIQUES VALID?

A. Ms. Starr faults Qwest's Switched Access cost study for several reasons. None of these reasons are valid. Ms. Starr points out that the cost of money used in Qwest's cost studies is higher than what the Commission ordered in its last rate case. This should hardly be a surprise to Ms. Starr due to the fact that Qwest is proposing a new forward-looking cost of money in this proceeding. This proceeding is the appropriate place for Qwest to recommend a different cost of money. If the Commission selects a different cost of money than that proposed by Qwest, then a different cost of money may be appropriate in Qwest's TSLRIC studies. Ms. Starr criticizes the use of Annual Cost Factors. Annual Cost Factors are commonly used to apportion indirect costs. They are justly intended to increase costs and are most often applied to investment determined costs as those costs are primarily direct costs. Ms. Starr's criticism is misdirected. Another criticism is that Qwest's cost studies have not excluded exchanges that it has proposed to sell to Citizens Utilities. The sale of these exchanges has not been approved by the Commission or the FCC. Until the sale is closed and final

it would be inappropriate for Qwest to reflect the sale of the exchanges and potentially lower its price floor for its retail services prematurely.

Ms. Starr states that "the most disconcerting issue" she has with Qwest's switched access cost studies is that the difference between Qwest's proposed price and its costs is too high. Technically this is not a criticism of Qwest's costs as it is a complaint about its proposed prices. However, Ms. Starr recommends that no mark-up over TSLRIC be allowed by the Commission. It is unclear whether this recommendation is for all services or just switched access – which is the set of services referenced in her testimony. Nevertheless, this is a reckless recommendation at worst, and a self-serving recommendation at best. If it is a recommendation for all of Qwest's services, then there would be little hope for Qwest to even come close to achieving a reasonable return on its fair value rate base from this proceeding, because forward-looking theoretical costs are not a surrogate for Qwest's fair value rate base. If, on the other hand, Ms. Starr is recommending that Qwest's rates for switched access recover no mark-up for shared, common, or embedded costs, then that recommendation is unreasonable and self-serving. Switched access rates should provide a reasonable level of recovery of direct, shared, common and embedded costs like any other service provided by Qwest.

CONCLUSION AND RECOMMENDATION

1 **Q. WHAT IS YOUR CONCLUSION AND RECOMMENDATION TO THE**
2 **COMMISSION?**
3 A. The testimony and analysis of Qwest's cost studies by the various parties are
4 incorrect and misleading. The loop provides a customer access to Qwest's
5 network. The customer may or may not use the loop for other services offered
6 by Qwest. Regardless of how the customer uses the loop, the cost of the loop
7 does not change. This fact is agreed upon in the industry, and is consistent with
8 mainstream economic principles. The cost of the loop is insensitive to usage.
9 The loop cost is incurred when and if the customer requests service. If the
10 customer chooses not to have access to the telephone network, Qwest would not
11 incur the cost of the loop. Mr. Dunkel's testimony attempts to refute these very
12 simple facts. He attempts to confuse the Commission by saying that if the
13 customer uses the loop for other services then the cost of the loop is a joint cost
14 that should be shared among services. This is incorrect. Services are not
15 allocated among other services. The cost of network access is the cost of the
16 loop. Network access, with local usage, is bundled in the service known as basic
17 exchange service.
18
19 Mr. Dunkel and Dr. Johnson believe that the loop cost is shared and recommend
20 that the cost of the loop be recovered from all services such as long distance,
21 switched access and public access lines. In contrast, Dr. Ileo believes that the
22 loop is not shared but recommends that public access line rates make no
23 contribution to Qwest's overall revenue requirement above his version of forward-
24 looking costs. Likewise, Ms. Starr believes the loop is not attributable to

switched access and recommends that switched access make no contribution to Qwest's revenue requirement above forward-looking costs.

Alternatively, Qwest recommends that its TSLRIC studies are reasonable estimates of its price floors for its services. As my rebuttal testimony reflects, none of these parties has proven their cases and therefore their recommendations should be disregarded. My recommendation to the Commission is to accept Qwest's revised costs as listed in my Supplemental Testimony for consideration of price floors for rates considered in this proceeding.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF U S WEST COMMUNICATIONS, INC., A COLORADO CORPORATION, FOR A HEARING TO DETERMINE THE EARNINGS OF THE COMPANY, THE FAIR VALUE OF THE COMPANY FOR RATEMAKING PURPOSES, TO FIX A JUST AND REASONABLE RATE OF RETURN THEREON, AND TO APPPROVE RATE SCHEDULES DESIGNED TO DEVELOP SUCH RETURN.	)	**DOCKET NO. T-1051B-99-105**
STATE OF COLORADO	)	**AFFIDAVIT OF Jerrold L. Thompson**
COUNTY OF DENVER	) :	**ss**

I, Jerrold L. Thompson, of lawful age being first duly sworn, depose and states:

1. My name is Jerold L. Thompson. I am the Executive Director-Service Cost Information for Qwest Corporation ("Qwest") (formerly U S WEST Communications Inc.) in Denver, Colorado. I have caused to be filed written testimony and exhibits in support of Qwest in Docket No. T-01051B-99-0105

2. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct to the best of my knowledge and belief.

Further affiant sayeth not.

Jerrold L. Thompson

Jerrold L. Thompson

SUBSCRIBED AND SWORN to before me this 17th day of August, 2000.

Maija Beck

Notary Public residing at
Denver, Colorado

My Commission Expires: May 8, 2004

BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF U S WEST COMMUNICATIONS, INC., A COLORADO CORPORATION, FOR A HEARING TO DETERMINE THE EARNINGS OF THE COMPANY, THE FAIR VALUE OF THE COMPANY FOR RATEMAKING PURPOSES, TO FIX A JUST AND REASONABLE RATE OF RETURN THEREON, AND TO APPPROVE RATE SCHEDULES DESIGNED TO DEVELOP SUCH RETURN.	)	**DOCKET NO. T-1051B-99-105**
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REBUTTAL TESTIMONY OF

WILLIAM E. TAYLOR, Ph.D.

SENIOR VICE PRESIDENT
NATIONAL ECONOMIC RESEARCH ASSOCIATES, INC.

ON BEHALF OF

QWEST CORPORATION

August 21, 2000

n/e/r/a
Consulting Economists

REBUTTAL TESTIMONY OF WILLIAM E. TAYLOR, Ph.D.

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I. INTRODUCTION AND PURPOSE

Q. PLEASE STATE YOUR NAME, OCCUPATION, AND BUSINESS ADDRESS.

A. My name is William E. Taylor. I am Senior Vice President of National Economic Research Associates, Inc. ("NERA"), head of its Communications Practice, and head of its Cambridge office located at One Main Street, Cambridge, Massachusetts 02142.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL, PROFESSIONAL, AND BUSINESS EXPERIENCE.

A. I have been an economist for over twenty-five years. I earned a Bachelor of Arts degree from Harvard College in 1968, a Master of Arts degree in Statistics from the University of California at Berkeley in 1970, and a Ph.D. from Berkeley in 1974, specializing in Industrial Organization and Econometrics. For the past twenty-five years, I have taught and published research in the areas of microeconomics, theoretical and applied econometrics, which is the study of statistical methods applied to economic data, and telecommunications policy at academic and research institutions. Specifically, I have taught at the Economics Departments of Cornell University, the Catholic University of Louvain in Belgium, and the Massachusetts Institute of Technology. I have also conducted research at Bell Laboratories and Bell Communications Research, Inc.

I have participated in telecommunications regulatory proceedings before several state public service commissions. In addition, I have filed testimony before

1 the Federal Communications Commission ("FCC") and the Canadian Radio-
2 television Telecommunications Commission on matters concerning incentive
3 regulation, price cap regulation, productivity, access charges, local competition,
4 interLATA competition, interconnection and pricing for economic efficiency.
5 Recently, I was chosen by the Mexican Federal Telecommunications Commission
6 and Telefonos de Mexico ("Telmex") to arbitrate the renewal of the Telmex price
7 cap plan in Mexico.

8 I have also testified on market power and antitrust issues in federal court. In
9 recent work years, I have studied—and testified on—the competitive effects of
10 mergers among major telecommunications firms and of vertical integration and
11 interconnection of telecommunications networks.

12 Finally, I have appeared as a telecommunications commentator on PBS
13 Radio and on The News Hour with Jim Lehrer. My curriculum vita is attached as
14 Exhibit WET-01.

15 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

16 A. I have been asked by Qwest Corporation ("Qwest") to evaluate the economic
17 testimony filed on August 9, 2000 regarding five issues: (i) the use of price cap
18 regulation as proposed by Staff,[1] (ii) the treatment of loop costs as joint costs of

[1] Testimony of Harry M. Shooshan III, Docket No. T-1051B-99-105, August 9, 2000, on behalf of the Staff of the Arizona Corporation Commission ("Staff").

1 telecommunications services in testimonies sponsored by the Staff[2] and RUCO,[3]
2 (iii) whether pricing carrier access service above incremental cost is anticompetitive
3 as alleged by AT&T,[4] (iv) whether Qwest's proposed competitive zone pricing
4 flexibility plan inadequately protects customers as claimed by AT&T and Cox,[5] and
5 (v) whether prices for payphone access lines should be set at forward-looking
6 economic cost as asserted by the Payphone Association.[6]

7 **Q. PLEASE SUMMARIZE YOUR CONCLUSIONS.**

8 A. The gist of my conclusions regarding the five economic points under review
9 follows.

10 1. While price cap regulation has superior incentive properties compared with
11 traditional rate of return regulation, the plan proposed by the Staff is flawed. It
12 increases pressure to move prices away from cost, and it reduces Qwest's
13 ability to rebalance rates. Mr. Shooshan's data do not support the productivity
14 offset he offers: he has used the wrong formula to calculate X and based his
15 estimate on a small subsample of the data. Initiating price caps with a
16 reduction in the price cap index to account for service quality problems is
17 unwarranted and will reduce Qwest's incentives to invest in Arizona
18 infrastructure.

19 2. Residential basic exchange service is subsidized at current rates. In concluding
20 the opposite, Dr. Johnson and Mr. Dunkel commit the time-honored economic
21 fallacy of allocating loop costs to services other than the basic exchange
22 services in which network access is bundled. The incremental cost of a loop is

[2] Direct Testimony of Thomas Regan, Direct Testimony and Schedules on Rate Design Issues of William Dunkel, on behalf of Staff.

[3] Direct Testimony of Ben Johnson, Ph.D., on behalf of the State of Arizona Residential Utilities Consumer Office ("RUCO").

[4] Direct Testimony of Arleen M. Starr, on behalf of AT&T Communications of the Mountain States, Inc. ("AT&T").

[5] Direct Testimonies of Dr. Francis R. Collins, on behalf of Cox Arizona Telecom, L.L.C. ("Cox"), and Dr. Lee L. Selwyn, on behalf of AT&T.

[6] Direct Testimony of Michael J. Ileo, on behalf of on behalf of the Arizona Payphone Association ("APA").

straightforward to measure, and to assign its cost to other services (i) reduces economic efficiency because too many people would purchase loops at a price of $2 per month and (ii) destroys local exchange competition because no entrant can compete against a $2 per month price for a service that would cost it an order of magnitude more to provide.

3. Pricing Qwest's carrier access above incremental cost is not anticompetitive. The contribution Qwest earns from providing carrier access does not give it an advantage in the toll market because for every minute of toll it supplies, Qwest forfeits a minute's worth of carrier access contribution. Qwest's long distance affiliate pays the same access charges as AT&T. In addition, AT&T and Qwest's long distance affiliate are in the same situation with respect to access charges: AT&T pays an access charge for most toll minute it carries and Qwest gives up an access charge for most toll minutes it carries.

4. In assessing Qwest's competitive zone pricing proposal, market share is a flawed indicator of the ability of a company to control the market price. Other indicators of competitiveness are more useful in the current context.

5. Neither FCC rules nor economic principles requires that payphone access lines be priced <u>at</u> forward-looking economic cost. As long as entrant and incumbent payphone suppliers pay the same price for services, there is nothing anticompetitive in recovering a reasonable amount of shared fixed and common costs from payphone line services.

II. WHILE PRICE CAP REGULATION CAN ENHANCE ECONOMIC EFFICIENCY, STAFF'S PRICE CAP PROPOSAL IS FUNDAMENTALLY FLAWED.

Q. WHAT ARE THE BASIC ECONOMIC ELEMENTS TO THE STAFF'S PROPOSED PRICE CAP PLAN?

A. As outlined by Mr. Shooshan (Section 5), each of Qwest's regulated services would be assigned to one of three baskets: (1) basic/essential retail services, (2) essential wholesale services other than UNEs and (3) advanced/competitive/nonessential services. Starting with the service prices established in this docket, prices in Basket One would fall relative to inflation on average by 4.2 percent per year. Prices in Basket Two would be frozen for five years except for carrier access services which would fall 20 percent over the five year period of the plan. Services

in Basket Three would qualify for streamlined rate treatment. Retail prices would fall between a maximum specified by tariff and a TSLRIC price floor. Services would be assigned to Basket Three when they meet the requirements of A.C.C. R14-2-1108.

Q. MR. SHOOSHAN OUTLINES POSSIBLE BENEFITS FROM PRICE CAP REGULATION IN SECTION 6. DO YOU AGREE WITH HIS DISCUSSION OF THE BENEFITS OF PRICE CAP REGULATION COMPARED WITH TRADITIONAL RATE OF RETURN REGULATION?

A. In some respects. For services whose prices remain regulated, price cap regulation produces better economic outcomes than traditional cost-plus, rate of return regulation. The opportunity to shift costs and cross-subsidize services is virtually eliminated under price cap regulation, and Qwest's incentives to reduce costs, expand output, invest and innovate would be much closer to those of unregulated firms' incentives under price cap regulation than under traditional rate of return regulation. Price cap regulation is especially useful when markets have been opened to competition so that competitive gains and losses actually flow through to the bottom line for Qwest as they do for unregulated firms.[7]

Q.DO YOU RECOMMEND THAT THE COMMISSION ADOPT THE STAFF'S PRICE CAP PROPOSAL?

[7] Under rate of return regulation, prices of less-competitive services could be raised to offset lower earnings from losses among more-competitive services.

A. No. As it stands, many of the potential benefits from price cap regulation would not be realized in the proposed plan. First, at the initial price levels proposed by the Staff, the price cap plan would prevent Qwest from moving prices of services which are already below incremental cost towards cost and instead would subject them to pressure for further reductions. Such price changes would reduce rather than increase economic efficiency and the resulting increased subsidization of residential basic exchange service would further retard the development of facilities-based competition for this service. Second, the pricing restrictions in Basket Two effectively reduce carrier access charges without permitting rate rebalancing or spreading the support for basic exchange service over a wider array of services. Third, the inability to rebalance rates combined with mandatory price reductions undermines the Staff's calculated productivity offset of 4.2 percent. Fourth, the Staff's proposed productivity offset ("X") of 4.2 percent is calculated incorrectly from the data used by the Staff.

Q. HOW WOULD THE STAFF'S PROPOSED PLAN DISTORT COMPETITION FOR RESIDENTIAL BASIC EXCHANGE SERVICE?

A. Staff proposes large initial reductions in residential basic exchange service prices, irrespective of the outcome of the revenue requirement phase of the case.[8] Prices for these services are already significantly below incremental costs (based on the Commission-approved unbundled loop rate of $21.98), and at the beginning of the

[8] See Schedule WDA-20 of Dunkel at 2.

Plan would be even further below incremental cost. The Staff's plan explicitly prevents increases in residential basic exchange prices through its "hard cap" on all basic exchange service prices in Basket One. In addition, the plan would subject basic/essential/retail services to average annual (real) rate reductions of 4.2 percent irrespective of the relationship between service prices and costs. As a result, residential basic exchange prices would not increase towards cost during the five years of the plan and would be under increasing pressure to decrease further below cost. Pricing residential basic exchange service below cost effectively prevents potential competitors from building their own facilities (or using Qwest's unbundled loops) to compete for residential basic exchange service.

Q. HOW DOES THE STAFF'S PROPOSED PLAN HELP REBALANCE RATES TOWARDS COSTS?

A. In some very basic ways, it doesn't. The Staff plan requires certain reductions in carrier access charges in Basket Two combined with a freeze on all other prices in that basket.[9] Thus the reductions in carrier access charges cannot be offset by increases to any other service prices, nor can they count as rate reductions in meeting the price cap constraint in any other basket.

[9] Staff's proposal in Mr. Shooshan's testimony doesn't make sense, taken literally. It requires Qwest to reduce access charges by "20 percent per year from their initial levels so that by the end of the initial five-year period they are equivalent to U S WEST's interstate access charges at July 2000 levels" [at 12]. Five years of 20 percent annual price reductions would drive access charges to zero, not to their interstate levels. I presume the proposal would move access charges to their interstate levels at a constant rate over a 5 year period.

When the FCC acted to reduce the contribution towards basic exchange service embodied historically in switched access rates, it rebalanced rates by increasing subscriber line charges and PICCs to offset reductions in the carrier common line charge. Because basic exchange rates are in a different basket from carrier access charges, the Staff plan rules out any kind of rate rebalancing as part of its proposed reduction in carrier access charges. That is, the Staff's proposed treatment of carrier access charges cannot be viewed as moving contribution historically assigned to carrier access charges back to basic exchange services.

Q. IS IT GOOD PUBLIC POLICY TO REDUCE CARRIER ACCESS CHARGES WITHOUT RATE REBALANCING?

A. Not in my opinion. Economic efficiency can be unambiguously increased by shifting the contribution previously recovered from carrier access charges to other services, particularly those that are flat-rated or are priced below incremental cost. However, rate reductions absent rate rebalancing do not necessarily increase economic efficiency.

Moreover, from a policy perspective, the Staff's proposal flies in the face of recent attempts to solve the rate rebalancing dilemma. In a recent paper, Mr. Shooshan argued that

> [i]f rate rebalancing, as traditionally conceived, is impossible, how do we get to a rate structure that is more economically efficient, sustainable and capable of addressing social concerns about affordability? The tack espoused later in this paper is to afford carriers much greater operating flexibility to define and price a diverse family of service packages

> combining different types of services and different pricing arrangements.[10]

According to the authors, the object of this greater operating and pricing flexibility is

> to permit ILECs to recover fixed network costs over a broad range of offerings (rather than loading them primarily on long-distance access charges and local line charges). The wider the range of services that an ILEC can offer on a subscriber's loop, the less any one service will have to bear of the fixed costs of that loop.[11]

By isolating carrier access services in Basket Two, Mr. Shooshan's current plan specifically prevents recovery of fixed loop costs over a wider range of services.

Q. HOW DOES THE INABILITY TO REBALANCE RATES BETWEEN BASKETS ONE AND TWO UNDERMINE THE STAFF'S PROPOSED PRODUCTIVITY OFFSET OF 4.2 PERCENT?

A. Because prices of all of the remaining services in Basket Two are frozen, carrier access price reductions cannot be offset by price increases for any other service. Twenty percent annual reductions in carrier access charges exceed inflation less 4.2 percent, so that the regulated firm will be required to lower prices on average by more than the reduction of 4.2 percent (relative to inflation) implied by the Staff's productivity analysis.[12] If the value of 4.2 percent were correct for the aggregate of

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[10] John Haring and Harry M. Shooshan III, "Cutting the Gordian Knot of Rate Rebalancing," presented at the 29th Annual Conference of the Institute of Public Utilities, "Reconciling Competition and Regulation," Williamsburg, Virginia, December 5, 1997 at 2.

[11] *Ibid.*, at 15-16.

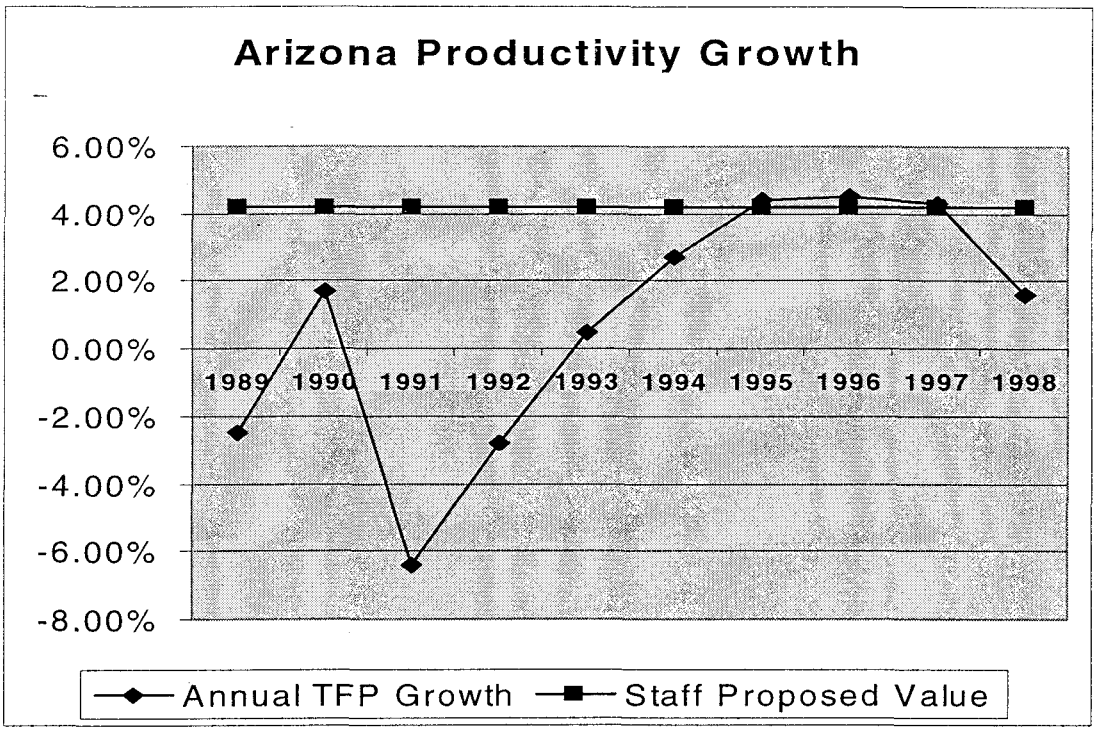
[12] Staff's productivity offset of 4.2 percent appears to pertain to all intrastate operations. Assuming regulatory oversight for the remaining services in Basket 2, (Shooshan (at 12) assumes these services will be "subject to further review by the Commission"), it is reasonable to assume that real intrastate prices will fall at approximately 4.2 percent per year. Basket One service prices fall at this rate by design. Prices of unbundled network elements explicitly follow unit costs which Shooshan asserts are falling at 4.2 percent in real terms. Similarly, it is reasonable to assume that prices of services in the competitive basket will fall at the same rate as

(continued...)

Qwest's regulated services, then the Staff's plan would reduce overall prices at a faster rate than unit costs were falling. The net result would be that even if Qwest could generate sufficient productivity growth to meet the Staff's target, its earnings would fall, since its average price would fall faster than its unit costs.

Q. DO YOU AGREE WITH MR. SHOOSHAN'S CALCULATION OF A 4.2 PERCENT HISTORICAL PRODUCTIVITY OFFSET?

A. No. Mr. Shooshan calculates "an average productivity of 3.7 percent" for 1995-1998 from data provided by Qwest. Actually, average productivity growth in the data cited by Mr. Shooshan is 0.8 percent, calculated using all of the data supplied.



(...continued)

unit costs. Under these assumptions, the 20 percent reductions in carrier access prices will lead to real aggregate price reductions in excess of 4.2 percent.

Moreover, total factor productivity ("TFP") growth for individual companies varies significantly from year to year, as can be observed in the above data supplied by Qwest, so that an average over the longest possible period of data is necessary in order for the average to be truly representative of the actual trend of TFP growth. Mr. Shooshan confines his average to 1995-1998 because this period "follow[s] [Qwest's] most recent rate case" [at 13]. However, the argument that the data should begin with Qwest's last rate case makes no sense. TFP growth is measured by the difference in growth rates of physical outputs and physical inputs and has nothing to do with the output prices that change in the wake of a rate case. There is no reason to expect a rate case—or changes in output prices for any other reasons—to affect TFP growth, and thus there is no reason to limit the analysis to 1995-1998.

Q. ARE THERE OTHER PROBLEMS WITH MR. SHOOSHAN'S CALCULATION?

A. Yes, even if Mr. Shooshan's TFP growth rate were correct, he has used the wrong formula to calculate the productivity offset X from Qwest's historical TFP growth. In setting the annual price adjustment formula for a price cap regulated firm, the productivity offset X is <u>not</u> set equal to the historical TFP growth of the regulated firm. Rather, the object of the exercise is to ensure that average prices decline in real terms at the same rate as the historical reduction in real unit costs. The formula that produces this result adjusts prices annually by U.S. inflation less X where

X = [Telco TFP Growth] – [U.S. TFP Growth]

– {[Telco Input Price Growth] – [U.S. Input Price Growth]}

Because the input price growth differential averages zero in the long run, the formula for X simplifies to the difference between LEC and U.S. average TFP growth. Since U.S. TFP growth averages about 1 percent per year (actually about 0.7 percent from 1995-1997 which is the latest data available from the Bureau of Labor Statistics), Mr. Shooshan's incorrect formula overstates the implied X factor by about one percentage point.

There are several additional problems with basing a productivity offset on the data used by Mr. Shooshan. First, productivity offsets are generally based on the historical productivity growth of the industry, not the regulated firm. Using historical firm productivity growth to set a productivity growth target for the firm for the future sets up an obvious distortion in the firm's incentives to increase its productivity growth. Second, the calculation for Arizona used by Mr. Shooshan uses the difference between rate-adjusted operating revenues and deflated expenses as a measure of productivity growth. Rate-adjusted revenue is only a rough approximation to an output quantity index and deflated operating expenses is an equally rough approximation to an input quantity index. While these data may be indicative of the pattern of input and output quantity growth rates, the calculation is far more approximate than those used to set productivity offsets in state and federal regulatory proceedings. Third, the data used pertain to intrastate revenues

1 and expenses and are thus subject to the uneconomic vagaries of the separations
2 process. For example, changes in separations factors or rules that shifted costs
3 from the intrastate to the interstate jurisdiction would appear as an increase in
4 productivity growth even though there was no change in the behavior of the firm.
5 On a more fundamental level, for technologies characterized by fixed costs shared
6 across services, TFP growth is not defined for a subset of services (such as
7 intrastate services).[13] This fact has been recognized by the FCC, which bases its
8 productivity offset for interstate services on TFP studies for the LEC industry that
9 use unseparated data.[14]

10 **Q. MR. SHOOSHAN PROPOSES AN ADDITIONAL OFFSET TO THE PRICE CAP**
11 **FORMULA TO ACCOUNT FOR INCREASED INCENTIVES TO REDUCE**
12 **SERVICE QUALITY. DO YOU AGREE THAT A SERVICE QUALITY OFFSET IS**
13 **NECESSARY?**

14 A. I understand that Qwest already has service quality standards with self-effectuating
15 refunds and penalties in place, which, in principle, were set to provide proper
16 incentives for Qwest to supply an efficient level of service quality. An arbitrary
17 increase to those penalties in the form of additional price reductions for basic
18 exchange services distorts the incentives, assuming they were set correctly in the

[13] A simple example shows why. Suppose switch modernization drives productivity growth, and switches are replaced and modernized more rapidly as usage grows and switch capacity must be expanded. Here, an increase in interstate or intrastate usage leads to the same increase in productivity (or decrease in unit costs). Thus, there is no meaningful measure of intrastate or interstate TFP growth for the firm.

first place. Even if there were no service quality standards in place, using the price cap annual adjustment formula to encourage the Company to improve service quality is far too blunt an instrument when markets are opened to competition. For example, if Qwest fails to provide comparable service quality to its wholesale and retail customers, penalties paid to wholesale customers or reductions in wholesale prices provide better incentives for wholesale quality improvement than requiring a reduction in retail basic exchange rates.

In addition, Mr. Shooshan apparently endorses an initial offset—i.e., an initial reduction in the price cap index—to address the Commission's concern with Qwest's current level of service quality [at 19]. Such a proposal diminishes whatever effects on incentives the Commission's service quality rules might have. If service quality penalties can be determined and applied after the fact, using a set of rules different from those under which the regulated firm thought it was operating, how can we expect the firm to respond to the incentives we establish in the price cap plan? Moreover, what lesson would we expect the regulated firm to learn from this exercise? That it can assume the rules are fixed and that it can safely invest sufficient amounts to make earnings as large as possible under the plan? On the contrary, an initial reduction in rates to account for current

(...continued)

[14] In the Matter of Price Cap Performance Review for Local Exchange Carriers, CC Docket No. 94-1, FCC 97-159, *Fourth Report and Order,* (released May 21, 1997).

1 inadequate service quality will only discourage the very investment that is
2 necessary to bring service quality to a level acceptable to the Commission.

3 **III. THE LOCAL LOOP IS *NOT* A SHARED FACILITY AND ITS COST IS PART OF THE COST OF**
4 **BASIC EXCHANGE SERVICE**

5 **Q. HAS THE QUESTION OF ASSIGNING THE COST OF THE LOCAL LOOP TO**
6 **SPECIFIC TELECOMMUNICATIONS SERVICES ARISEN IN THIS DOCKET?**

7 A. Yes. Despite the fact that the economic issues in determining the cost of basic
8 exchange service have been settled for many years, Mr. Dunkel and Dr. Johnson
9 raise this question on behalf of the Staff and RUCO.

10 **Q. WHAT DO MR. DUNKEL AND DR. JOHNSON PROPOSE?**

11 A. They claim that the cost of the local loop is a joint or shared fixed cost of all of the
12 services that use the loop. Mr. Dunkel asserts that the total service long run
13 incremental cost ("TSLRIC") of residential basic exchange service should not
14 include the cost of the loop since a loop is necessary to provide other services. On
15 this basis, Mr., Dunkel and Dr. Johnson conclude that residential basic exchange
16 service does not receive a subsidy, since its price exceeds the TSLRIC of
17 residential basic exchange service, ignoring the cost of the loop. These views of
18 the cost of basic exchange services then drive Mr. Dunkel's and Dr. Johnson's
19 view of appropriate rates for those services.

20 **Q. DO YOU AGREE WITH MR. DUNKEL'S CONCLUSION (AT 42) THAT THE**
21 **COSTS OF THE LOCAL LOOP SHOULD NOT BE INCLUDED IN THE TSLRIC**
22 **OF RESIDENTIAL BASIC EXCHANGE SERVICE?**

1 A. No. This position has been thoroughly discredited in the economics literature, most
2 persuasively in a classic article by A.E. Kahn and W.B. Shew, in which this point is
3 the first of six pricing fallacies.[15] Mr. Dunkel's conclusion is contrary to sound
4 economic principles and based on a misunderstanding of economic costs and the
5 cost recovery process. A public policy based on Mr. Dunkel's conclusion would
6 promote economic inefficiency, lead to a wasteful use of society's scarce
7 resources, and distort consumption and production incentives. In contrast to Mr.
8 Dunkel's conclusion, economic principles dictate that the cost of a loop should be
9 recovered in the price of the service—network access—the demand for which
10 brought about the production of that loop. To recover the cost of a loop based on
11 any other principle would be a departure from sound economic reasoning.

12 From a practical perspective, suppose residential local exchange service
13 were priced at the TSLRIC Mr. Dunkel calculates (around $2 per month).
14 Economic efficiency would suffer because customers who valued the service at
15 only $2 per month would sign up, even though the cost of providing network access
16 to them certainly exceeds 10 times that amount, based on the unbundled loop rate
17 of $21.98. Competition would also be distorted. Competitors who wish to sell
18 telecommunications services to these residential customers will be pleased to
19 provide local usage, long distance usage, vertical services, carrier access, Internet
20 access, etc., but they will not be able to provide a local loop profitably, given that

[15] A.E. Kahn and W.B. Shew, "Current Issues in Telecommunications Regulation: Pricing," Yale Journal on Regulation, 4, 1987 at 191-256. See also, W.E. Taylor, "Efficient Price of Telecommunications Services: The (continued...)

1 Qwest must sell them for $2. Instead, network access would be exclusively
2 supplied by Qwest at a rate level which was an order of magnitude below the cost
3 to Qwest to supply network access. To serve a residential customer profitably
4 under these circumstances, Qwest would have to mark up the prices of its usage
5 and vertical services—the very services which competitors have targeted—by at
6 least $20 per month for an average customer in order to break even.

7 **A. Economic Principles**

8 **Q. WHAT ARE THE RELEVANT ECONOMIC PRINCIPLES ON WHICH YOU RELY**
9 **TO FORM YOUR CONCLUSION ABOUT HOW THE COST OF A LOOP**
10 **SHOULD BE ASSIGNED?**

11 A. The fundamental principle is *cost causation*, that principle in economics that aligns
12 the price paid by a consumer with the costs incurred by society to fulfill that
13 consumer's demand. Simply put, cost causation provides the answer to the
14 question of why the resources used in providing the loop have been expended.
15 The costs associated with the loop are caused by a customer gaining access to the
16 network. Applying the principle of cost causation leads directly to an efficient
17 economic outcome which, in this case, is that the cost of a loop should be assigned
18 only to Qwest's local exchange service, which is a bundled service consisting of
19 local usage and network access.

(...continued)

State of the Debate," Review of Industrial Organization, Vol. 8, pp. 21-37, 1993.

Q. BOTH MR. DUNKEL AND DR. JOHNSON ASSERT THAT LOOP COSTS ARE A COMMON OR JOINT COST OF PROVIDING A NUMBER OF SERVICES AND THAT THOSE SERVICES SHOULD PROVIDE A CONTRIBUTION TOWARDS RECOVERING THE COST OF THE LOOP. WHAT ARE THE RELEVANT COST PRINCIPLES YOU RELY UPON TO FORM YOUR CONCLUSION REGARDING HOW THE COST OF A LOOP SHOULD BE ASSIGNED?

A. A fundamental problem with this analysis is the assertion that loop costs are a common cost of providing a number of services. In economic theory, costs are categorized as directly assignable (i.e., activity-specific) or shared or common (i.e., not specific to any single activity). In addition, costs are categorized as volume-sensitive or volume-insensitive. The significance of such classifications is in how each kind of cost is recovered.

- Volume-sensitive (or *variable*) cost is the cost that varies with the level of the activity that generates it. For example, the total cost of switching within a telephone network depends on the volume of peak hour usage (toll or access switched traffic) on that network. As that traffic increases, more switches are installed and the cost of switching increases in proportion.
- Volume-insensitive (or *fixed*) cost, on the other hand, is a cost that is generated by an activity but does not vary with the level of that activity. Such a cost may not be increased or reduced; it is either incurred or avoided. The only way to avoid a volume-insensitive cost is to cease altogether the activity that generates it. An example of a fixed or volume-insensitive cost is the right-to-use fee for software installed on network facilities. Such software is necessitated by switched traffic over the network (the activity), but its cost does not vary with the level of usage on the network. That cost may only be avoided by eliminating the need for the software, i.e., by ceasing to carry the traffic that depends on the software.
- Volume-sensitive costs are usually always *directly assignable*. That is, since a volume-sensitive cost varies with the level of a specific activity, it is always possible to identify the "cause" of that cost (namely, that activity) and, hence, to attribute all of the cost to that activity.

- Volume-insensitive costs, in contrast, may be either directly assignable (i.e., activity-specific) or shared or common (i.e., *not* specific to any single activity). An example of a directly assignable volume-insensitive cost (alternatively, *service-specific fixed cost*) is the right-to-use fee for software that is only used to provide a single type of telephone service. Such a service-specific fixed cost could be avoided only by ceasing to provide the telephone service in question in its entirety.
- *Shared fixed* costs are the fixed costs that are shared by two or more, but less than all, of the activities of a firm. Ceasing one or the other of these activities will not avoid these shared costs; only the cessation of all of *that subset of activities* will avoid the shared costs. An example is the Advanced Intelligent Network (AIN) which, when installed, can be used to provide a variety of AIN services; however, not providing any one service in that group will not avoid any portion of the cost of that network.
- *Common fixed* costs are the costs that are shared by *all* of the activities of a firm. Common fixed costs can only be avoided by ceasing *all* of the activities of the firm altogether. The classic example is the president's desk. Typically, corporate functions like accounting, finance, human resources, legal, etc. are examples of common fixed costs. These are sometimes referred to as *overhead* costs.

The principle of cost causation requires that activity-specific costs be assigned to (and recovered in the price of) the service that required the activity to occur. The recovery of costs that are truly shared or common is also guided by economic theory, albeit not primarily by the principle of cost causation. If only allocative economic efficiency mattered, shared fixed and common costs would be recovered by marking up service prices above direct cost in inverse proportion to their price elasticities of demand so that services would be consumed in the same proportions as if all services were priced at incremental cost.

Q. HOW DO YOU RESPOND TO MR. DUNKEL'S CONTINUING CLAIM THAT IF QWEST WERE TO DISCONTINUE OFFERING RESIDENTIAL BASIC

EXCHANGE SERVICE ALONE, IT WOULD ONLY AVOID THE COSTS OF LOCAL USAGE AND SOME OTHER MINOR COSTS?

A. It is instructive to present Mr. Dunkel's views in his own words. While explaining how, in his view, the TSLRIC of a service should be calculated, he states [at 40] that:

> USWC included 100% of the unseparated loop costs in what it claims to be the basic exchange TSLRIC. However, the loop facilities are required for the provision of other products and services. The loop facilities would not be eliminated if basic exchange service was discontinued, while all other services were still being offered. Therefore, the loop cost is not part of the properly calculated TSLRIC...It is an indisputable physical fact that the loop facility is shared by several services, only one of which is basic exchange service. It is an indisputable physical fact that the loop facility would still be needed even if basic exchange service was not provided, but USWC continued to provide all of its other services. This means the loop costs are not 'caused' by basic exchange service alone.

First, because residential basic exchange service is really an integrated offering of two distinct and separable services—non-usage-sensitive network access and local usage—any withdrawal of that integrated service will mean that Qwest will avoid not just the cost of local usage service but also of the network access service (the loop).

A perfect example of this principle is the telephone set. Prior to divestiture in 1984, the telephone set was owned by the local telephone company and was explicitly an integral, non-traffic sensitive part of the local loop. In January 1984, the Bell System sold its telephone sets to its subscribers and, in most cases, no longer owned that portion of the loop. If the cost of the telephone set—like the rest of the loop—were really a common cost of local and toll usage services, then local

1 and long distance companies would be reimbursing customers for the (joint) cost of
2 originating or terminating calls on their telephone sets. Of course, such
3 reimbursement has never taken place, and there are no economic forces in play
4 that would lead to such payments. When a friend calls me and AT&T terminates
5 the call on my phone, that call imposes no cost whatsoever on my part of the local
6 loop—i.e., my phone. I don't bill AT&T for using my phone, and IXCs and LECs get
7 to use my part of the local loop—my phone—for free. In just the same way, when
8 a carrier terminates a call to me, no cost is imposed on the part of the local loop
9 owned by Verizon. There are no costs that Verizon can bill to the carrier, and
10 carriers do, and should, get to use Verizon's local loop for free.

11 Second, CLECs and IXCs frequently offer local usage service to customers
12 without supplying network access to them. Indeed, that is exactly the model that
13 applies when a CLEC provides usage services of its own to the customer but
14 leases an unbundled loop from the incumbent LEC on behalf of that customer.
15 Here, too, the cost of the unbundled loop stands on its own: the CLEC that leases
16 it must fully compensate the incumbent LEC for that cost. The CLEC may *choose*
17 to recover that cost from its customer by spreading it into the prices it charges for
18 various usage services, but the cost at the original point at which the loop was
19 provisioned by the incumbent LEC to the competitive LEC remains intact and is
20 recovered in its entirety by the supplier of the loop.

21 Third, contrary to Mr. Dunkel's assertion, a LEC like Qwest would *not* have
22 to stop providing the entire family of access and usage services in order to avoid

1 the cost of the loop. If Qwest were to decide to cease the supply of all services
2 *except* for basic exchange service, it would not avoid the cost of the loop. But, if it
3 decided to withdraw only its basic exchange service—specifically, the network
4 access part—and kept all the other services, then it would definitely avoid the cost
5 of the loop, just as long distance carriers, alarm companies, and other enhanced
6 service providers do. This is the acid test of a shared cost: Does the entire cost of
7 the allegedly shared facility disappear when one of the services it is claimed to
8 support is withdrawn? If the answer is "yes," then that facility cannot be shared.
9 As its cost disappears with the withdrawal of basic exchange service, the local loop
10 cannot be a shared facility.

11 **Q. DR. JOHNSON CLAIMS (AT 4 AND APPENDIX C AT 3) THAT THE COST OF**
12 **THE LOOP IS A JOINT COST. DO YOU AGREE?**

13 A. No. There are three important reasons why the cost of a loop is not a joint cost of
14 producing other telecommunications services. First, access to the network is a
15 service which customers value in isolation and which telephone companies can
16 and do supply in isolation. The fact that the loop is an <u>output</u> of suppliers and not
17 simply an input into the production of other telephone services distinguishes it from
18 the classical cases of joint costs such as hay producing beef and hides or chicken
19 feed producing egg yolks and whites. Second, loops and telephone usage are not
20 supplied in fixed proportions. Some customers use their loops frequently for a
21 variety of services; others, not at all or for a different mix of services. Third, there is
22 no ambiguity in calculating the incremental cost of supplying the loop, and

1 economic efficiency is enhanced if customers who demand a loop be dedicated to
2 their service for a month actually pay a price equal to the cost of supplying that
3 loop to that customer for a month. Note that this conclusion holds irrespective of
4 the reason why a customer wants a loop: e.g., to receive calls, to make local or
5 long distance calls or to hang the wash out to dry. The cost that the decision to
6 demand a loop imposes on the supplier is the same regardless of the reason or the
7 use.

8 **B. Treating the Loop as a Common Cost Violates the Principle of Cost**
9 **Causation.**

10 **Q. PLEASE EXPLAIN WHY THE TREATMENT OF LOOP COSTS AS COMMON OR**
11 **SHARED IS SO CONTRARY TO ECONOMIC PRINCIPLES.**

12 A. Economists generally disagree with this view of the local loop because it conflicts
13 with the fundamental principle of cost causation. This principle tells us why the
14 resources used in providing the loop have been expended. The answer is simple:
15 the costs associated with the loop are caused by *a customer gaining access to the*
16 *network*. That is true whether that access is gained as part of a standard bundled
17 offering like residential basic exchange service or, in the new environment, by
18 purchasing an unbundled loop. Once the loop is provisioned, the cost has been
19 incurred. The way in which it is *used* (if at all) *does not change that cost.*

20 This is a subtle, but important, point. A customer that purchases (or leases)
21 the loop essentially acquires the *right* to access the network and receive services
22 of his or her choosing. Actual usage of the loop does not matter for cost causation.

The loop has been provisioned—and a cost incurred—regardless of whether the customer uses the loop at all, accesses only one service, or accesses multiple services. The cost of a loop is independent of its use and it should be recovered regardless of its actual use. The contrary position taken by Mr. Dunkel—that the loop's cost should depend on *how* it is used—is based on a fallacy.

To see why that is so, ask whether the cost of the loop should be recovered in different amounts from different customers, depending on how many services (including none at all) they access with it. If the answer is "yes," then the fallacy just gets deeper and leads to absurd results. For example:

- Should the cost of constructing a highway be considered a shared cost to butchered meats, milk, stereo equipment, and dry cleaning because distributors of these products use that highway to receive them?[16]
- Similarly, should a car be considered a shared cost of motels since access to motels is facilitated by the car?

The fallacy of equating shared cost with shared use can be avoided by thinking of the loop facility as providing access to the network—a service in its own right and, therefore, a facility with its own unique cost and price. This requires that the loop be thought of as an "output" rather than as an "input."

It is instructive to further explore the idea that access to the network (the loop) is a service in its own right. A customer may take just the network access service (in order to *receive* calls) but avoid originating toll or other types of calls

[16] Steve G. Parsons, "Seven Years After Kahn and Shew: Lingering Myths on Costs and Pricing Telephone Service," *Yale Journal on Regulation*, 11, 1994, at 149-170.

over the telephone network. That is, while network access service logically precedes consumption of any other service, taking the network access service does not *require* that some other service also be taken. Once a customer acquires network access or a loop, other services can only be made available to that customer at *additional* cost. For example, provision of toll service to a customer would cause the network to incur a cost that is separate from that for the loop. Therefore, the loop cannot be a shared cost.

Economists have offered several other arguments against regarding the loop as a shared or common cost. Some of these are as follows.[17]

- Charges for access alone are frequently found in competitive markets (e.g., clubs, credit cards, on-line computer services, long distance telephone service, etc.).
- The cost of a service should not be confused with the *benefits* that service provides. Loop costs belong to subscriber access regardless of whether the loop provides value to other services or customers. Your careful maintenance of your car makes the road safer for me, but don't expect me to pay for it.

Q. IS IT ECONOMICALLY EFFICIENT TO CHARGE FOR THE LOCAL LOOP AS A SEPARATE NETWORK ACCESS SERVICE?

A. Yes. Under current practice, that is exactly how it is priced (with network access and usage bundled together to form the core residential basic exchange service). The cost causation principle provides guidance about the economically efficient pricing of the loop. Consider the following two questions that were asked, and answered, by Alfred Kahn and William Shew over a decade ago.

[17] Kahn and Shew, and Parsons, *op cit.*

> ... First, does subscriber access have a separate identifiable incremental cost associated causally with providing it? The answer is, unquestionably, yes. Connecting a customer to the network uses scarce resources, even if he or she never uses the connection. The customer who subscribes to two access lines imposes a greater cost than a customer who subscribes to one, even if they make the same number of calls at the same times and places.
>
> Second, does charging for access serve a purpose? The answer is that it serves the very important purpose of economic efficiency if buyers are confronted, in each of their purchase decisions, with prices that reflect the respective incremental costs to society of their taking more or less of each available good and service or, to put it another way, what costs society would save if they took less of each.
>
> ... Using the price of telephone calls to recover access costs that do in fact not vary as more or fewer calls are made therefore induces wasteful choices by customers. It encourages them to order underpriced access lines that they value less than the incremental costs to society of providing the lines, and it discourages them from making overpriced calls whose value to them would have exceeded the incremental cost to society. The same result would follow if an electric utility were to supply its customers with all the appliances they wanted at no charge and recovered the costs in the price of electricity—wasteful overpurchasing of appliances and underconsumption of electricity.[18]

Only a price reflecting the cost of the loop will ensure the socially optimal level of use of that facility. If the loop is part of a bundled basic exchange service, then the cost of the loop should be assigned to that bundled service.

C. Practical Problems Arise if Loop Costs are Treated as Common.

Q. WHAT PROBLEMS ARISE IF NON-TRAFFIC SENSITIVE LOOP COSTS ARE RECOVERED FROM USAGE SERVICES ON A MINUTE-OF-USE BASIS?

[18] Kahn and Shew, *op cit.*, at 201. Footnote in text omitted.

A. Consider the case of Fred and Barney. Fred only calls Wilma once a day, while Barney's teen-age daughter keeps the phone in constant use. Suppose some portion of the loop cost is allocated to usage and recovered on a minute of use basis. At the end of the month, Fred will not have paid for his loop (because his usage is below average), and Barney will have paid for his loop many times over. To say nothing of fairness or efficiency, once competition begins, such pricing is not even sustainable. Any firm that prices loops at their full cost—and doesn't recover a portion of those costs from usage—will attract the Barneys of the world, and any firm that continues to try to recover loop costs from usage will find that its customer mix looks a lot like Fred. Like a perverse Lake Wobegon, all its customers will have below average use, and the firm will not be able to price its usage to recover the portion of loop costs assigned to usage.

Q. HAS THE FCC ADDRESSED THE ISSUE OF RECOVERING LOOP COSTS FROM SERVICES THAT USE THE LOOP?

A. Yes. At the interstate level, the FCC has already moved to replace some past pricing anomalies (like minutes-based carrier common line charges for carrier access) with more appropriate fixed line charges.

> In rationalizing the switched access rate structure in this Order, our primary goal is to ensure that traffic-sensitive costs are recovered through traffic-sensitive charges and NTS costs are recovered through flat-rated charges, wherever appropriate. Because many NTS costs are currently recovered through per-minute charges, the principal effect of our Order is to reduce the amount recovered

> through per-minute interstate access charges and increase the amounts recovered through flat-rated charges.[19]

There are several theoretical and practical reasons for not resorting to arbitrary minutes-based allocators of the loop cost. In addition, there is little economic justification for any allocation mechanism that recovers the *same* proportion of shared and common costs from a set of designated services. Such an allocation is no more or less arbitrary than one which relies on minutes of use; in fact, any assignment of costs not based on cost causation would be arbitrary and, therefore, without any economic basis.

Q. WHAT OTHER PRESCRIPTIONS DOES THE FCC HAVE REGARDING HOW COSTS SHOULD BE RECOVERED?

A. A key issue in this question is the treatment of NTS costs. The FCC has repeatedly shown by its rulings that it clearly understands that economic efficiency is reduced if non-traffic sensitive (NTS) costs are recovered using traffic-sensitive (TS) rates. With respect to the portion of the loop cost allocated to the interstate jurisdiction, the FCC has moved away from usage-based recovery:

> Because common line and other NTS costs do not increase with each additional minute of use transmitted over the loop, the current per-minute CCL charge that recovers [interstate] loop costs represents an economically inefficient cost-recovery mechanism and implicit subsidy. A rate structure that recovers NTS costs through per-minute charges creates an incentive for customers to underutilize the loop by requiring them to pay usage rates that significantly exceed the incremental cost of using the loop. Additionally, a rate structure that

[19] In the Matter of Access Charge Reform, CC Docket No. 96-262, First Report and Order, FCC 97-158, ¶53 (rel. May 16, 1997).

> forces high-volume customers to pay significantly more than the cost of the facilities used to service them is not sustainable in a competitive environment because high-volume customers can migrate to a competitive LEC able to offer an efficient combination of flat and per-minute charges, even if the competitive LEC has the same or higher costs than the incumbent LEC.[20]

With respect to the recovery of cost for unbundled network elements (UNEs), the FCC again has clearly expressed its requirement that costs of dedicated (activity-specific) facilities "including, but not limited to, charges for Unbundled loops, dedicated transport, interconnection and collocation" be recovered on something other than a usage basis. The Commission requires that:

> ...flat-rated charges [be assessed] for dedicated facilities. Usage-based charges for dedicated facilities would give purchases of access to network elements an uneconomic incentive to reduce their traffic volumes. Moreover, purchases of access to network elements with low volumes of traffic would pay below-cost prices, and therefore have an incentive to add lines that they would not add it they had to pay the full cost.[21]

Q. HAVE STATE REGULATORS ADDRESSED THE ISSUE OF RECOVERING LOOP COSTS FROM SERVICES THAT USE THE LOOP?

A. Yes, but state regulators have historically been required to make decisions that balance a variety of concerns—and until recently, economic efficiency was not the most important consideration. Before the Telecommunications Act of 1996 and the elimination of entry barriers that opened telecom markets to competition, one primary objective of state regulatory decisions was to keep the price of basic local

[20] In the Matter of Access Charge Reform, CC Docket No. 96-262, First Report and Order, FCC 97-158, ¶69 (rel. May 16, 1997).

1 sufficiently low to assure that universal service objectives were met. The informal
2 compact formed by state and federal regulators and local exchange telephone
3 companies purposefully shifted cost recovery responsibility for the local loop away
4 from local service and to long-distance, access and vertical services to achieve that
5 goal. Thus, when we observe, as Mr. Dunkel and Dr. Johnson do, that regulators
6 historically appear to have made decisions that shifted loop cost recovery to other
7 services, that observation does not validate the premise that the loop constitutes a
8 shared cost, but rather that regulators decided to subsidize basic exchange service
9 to achieve an explicit policy objective.

10 One state regulatory decision of which I am aware explicitly considered the
11 issue of economic efficiency and determined that "it would not be appropriate to
12 treat the loop as a shared cost." This decision relied, in part, on the arguments
13 presented in Kahn and Shew, *op cit.*[22]

14 **Q. PLEASE SUMMARIZE YOUR OBJECTIONS TO THE CHARACTERIZATION**
15 **THAT THE COST TO PROVIDE A LOCAL LOOP IS COMMON OR SHARED**
16 **COST THAT SHOULD BE RECOVERED IN PRICES OF ALL THE SERVICES**
17 **THAT CAN BE DELIVERED OVER THE LOOP.**

(...continued)

[21] In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, CC Docket No. 96-98, First Report and Order, FCC 96-325, ¶744 (rel. August 8, 1996).

[22] Public Utilities Commission of the State of California Decision 96-08-021, August 2, 1996.

A. This view is based on several misconceptions and fallacies. Specifically, my objections to that view are as follows:

1. It ignores or misuses the economic principle of cost causation. As a result, it confuses the cost-causer (namely, the consumer or purchaser of the loop) with the entity that incurs, and needs to recover, the cost (namely, the supplier of the loop). It stands cost causation on its head by focusing on the possible *uses* of the loop—whether intended or not by its purchaser—as opposed to the economic activity that gave rise to its cost. The cost of the loop arises as it is first provisioned; how it is used subsequently does not change that cost.
2. It fails to distinguish between network access (provided by the loop) and usage services that are typically bundled into basic exchange service. Hence, it fails to recognize that network access is an output, not an input, and may be demanded independently in its own right.
3. Charging for network access separately from usage services is economically efficient. It also avoids having to engage in nightmarish calculations of the share of the loop's cost that must be borne by other services, particularly (1) when consumers may consume usage services in different proportions and those proportions may change over time, and (2) the services are provided by different service providers, all using the same loop as a delivery vehicle. Any method of allocating the loop cost is likely to be arbitrary and fraught with uncertainty.

D. Consequences of Errors.

Q. SUPPOSE THE COMMISSION ERRS IN ASSIGNING LOOP COSTS TO TOLL AND ACCESS. WHAT ARE THE CONSEQUENCES FOR ARIZONA CONSUMERS?

A. If loop costs are assigned to usage services, prices of basic exchange service will be below cost and prices of toll and access will be set further above cost than if the error were not made. Pricing basic exchange service below cost is inefficient (customers face incorrect incentives to subscribe to service), but such pricing has little effect in aggregate because the demand for basic exchange service is

extremely price inelastic: that is, a small reduction in price will not induce many new customers to subscribe to service. In contrast, pricing toll and access above cost leads to a much larger reduction in efficiency because the price elasticity of the demand for toll service is (comparatively) elastic. Thus, a large number of calls whose value to customers exceeds their cost will not be made because the price of toll was set above cost.

Q. SUPPOSE THE OPPOSITE HAPPENS, AND, FOR WHATEVER REASON, THE PRICE OF BASIC EXCHANGE SERVICE IS SET <u>ABOVE</u> COST. WHAT WOULD BE THE ECONOMIC CONSEQUENCES OF THAT DECISION?

A. There is nothing unusual in telecommunications economics about setting the price of a service above its cost. Because telecommunications services are provided using large proportions of fixed costs, if all services were priced at their direct costs, no telecommunications provider would be able to recover its total cost in revenue. Thus, it is common to find telecommunications service prices marked up above their direct cost, and the problem of efficient cost recovery is to choose which services to mark up more above cost and which to mark up less. If efficiency were the only concern, economists would mark up service prices in inverse proportion to their price elasticity of demand, because that set of prices would minimize the distortion caused by the need to price above direct cost in the aggregate. Technically, the mark ups that minimize the loss in allocative efficiency are those that cause customers to demand services *in the same proportion* that they would if all prices were set at direct cost. Thus, inelastically-demanded

1 services like basic exchange service would receive comparatively *high* mark ups,
2 while comparatively elastic services like toll or access would receive lower mark
3 ups.

4 **IV. PRICING CARRIER ACCESS SERVICE ABOVE INCREMENTAL COST IS NOT**
5 **ANTICOMPETITIVE.**

6 **Q. ON BEHALF OF AT&T, MS. STARR ASSERTS (AT 31) THAT QWEST IS ABLE**
7 **TO EXERT A PRICE SQUEEZE AGAINST ITS COMPETITORS, DESPITE**
8 **ADHERENCE TO THE ARIZONA IMPUTATION RULES. IS THIS CLAIM**
9 **CORRECT?**

10 A. No. This claim—and Ms. Starr's example—fails the tests of basic economics and
11 common sense. The example supposes that access charges are 7.8 cents per
12 minute while the cost of supplying switched access is 1.2 cents. Non-access costs
13 of providing toll service are assumed to be 2 cents per minute for both AT&T and
14 Qwest. Ms. Starr then observes that the cost of service for AT&T "truly is" 9.8
15 cents per minute while Qwest's "switched access *cost* for that toll minute is only 3.2
16 cents." If the imputed price floor for Qwest is 9.8 cents per minute (non-access
17 cost plus access price), Qwest still earns a profit, Ms. Starr claims, of 6.6 cents per
18 minute which

19 is a profit from a monopoly service that can, among other things, be used
20 to fund advertising campaigns, make network improvements that will win
21 customers for its toll services or network upgrades to provision advances
22 (*sic*) services...This is an enormous economic barrier for competitors to
23 overcome. [at 30-31].

There are several problems with this line of thought. First, carrier access is a regulated service which is priced above incremental cost. Therefore, it is true that when Qwest provides carrier access service, it generates contribution which can be used to support shared fixed and common costs, subsidized services or any other expenditure flow of the corporation. However, that contribution flow is not a barrier that toll competitors must overcome.[23]

Q. WHY IS THIS HYPOTHETICAL 6.6 CENT PRICE ADVANTAGE FOR QWEST NOT A BARRIER FOR TOLL COMPETITORS?

A. Suppose, as Ms. Starr does on p. 31, that toll competition drives the toll price down to 9.8 cents. As Ms. Starr calculates

> [w]hen the price reaches 9.8 cents, it is no longer profitable for [Qwest's] competitors to enter or remain in the market over the long run, because that is the point at which the competitor's price equals its cost. On the other hand, at a price of 9.8 cents, [Qwest] still makes a profit of 6.6 cents. [at 31]

The first flaw in Ms. Starr's example is that, under the law, Qwest must charge its long distance affiliate precisely the same 7.8 cents per minute that it charges AT&T. This was Congress' answer to any concern about anticompetitive conduct arising from the *level* of the access rate. The second flaw in Ms. Starr's reasoning is that Qwest will receive the same 7.8 cents per minute in access charges, *irrespective* of which long distance provider actually carries the call.

[23] AT&T cannot object to the fact that Qwest derives positive contribution from a service. Surely AT&T derives contribution from its cable services which can be used to support no end of competitive purposes among the services AT&T provides.

1 However, if its *affiliate* were to carry the call, Qwest would not receive 7.8 cents per
2 minute in access charges from any unaffiliated long distance carrier. Thus, a
3 Qwest manager attempting to optimize corporate profits would have to recognize
4 the 7.8 cents in access *cost* to Qwest whenever the Qwest long distance affiliate
5 carried the long distance call—not because of imputation rules or separate affiliate
6 accounting formulas, but because the 7.8 cents per minute that used to go into its
7 corporate pocket would no longer do so when its own affiliate carried the long
8 distance call. What Ms. Starr characterizes as a 6.6 cents "profit" to Qwest even
9 under imputation turns out, under closer scrutiny, to really be a cost.

10 Thus, when AT&T carries the call, Qwest Corporation earns a contribution of
11 6.6 cents per minute for providing carrier access services. When Qwest itself
12 carries the call (at a retail price of 9.8 cents per minute), Qwest Corporation earns
13 a contribution of 6.6 cents per minute—9.8 cents less non-access costs of 2 cents
14 and access costs of 1.2 cents. At a retail price below 9.8 cents, Qwest would lose
15 money by providing long distance service—providing access would be more
16 profitable. If Qwest's non-access costs were higher than 2 cents—perhaps
17 because of the advertising campaigns or network upgrades that Ms. Starr believes
18 to be anticompetitive—it would similarly be unprofitable for Qwest to supply long
19 distance service at a price of 9.8 cents. In short, the decisions that a profit-
20 maximizing manager of Qwest's long distance service would make—e.g., pricing,
21 marketing, network investment—would be precisely the same as those that an
22 AT&T manager would make. AT&T incurs an access cost of 7.8 cents when it

carries a long distance call; Qwest incurs an access cost of 1.2 cents plus an opportunity cost of 6.6 cents (lost contribution from access) when it carries a long distance call. While Qwest certainly benefits from the contribution from carrier access, that contribution does not give it any advantage in the toll market, and every company, AT&T included, earns contribution from services other than toll.

V. QWEST'S COMPETITIVE ZONE PROPOSAL WILL LEAD TO EFFICIENT LOCAL EXCHANGE COMPETITION.

Q. HOW HAVE WITNESSES FOR QWEST'S COMPETITORS RESPONDED TO ITS PROPOSAL TO PERMIT PRICING FLEXIBILITY IN AREAS WHERE SERVICES ARE SUBJECT TO COMPETITION?

A. In response to Mr. Teitzel's testimony, Dr. Collins argues that current conditions in Arizona do not warrant approval of any applications for competitive zone designations. According to Dr. Collins, Qwest's loss of market share is still too small for the Commission to conclude that any true and sustainable competition exists in any Arizona market. Dr. Collins argues that "Qwest has failed to meet its burden of proof that the Arizona telecommunications market has robust competition and has in fact proven it does not."

Dr. Selwyn, on behalf of AT&T, also states that not enough competition has yet materialized in Arizona to allow Qwest's request for competitive zone designation to be granted. He also expresses his concerns that some of the indicators that Qwest uses to support its claims that competition is materializing in the Arizona marketplace—such as the proximity of access lines to competitor fiber

1 and the extent of collocation—are irrelevant. Both Dr. Collins and Dr. Selwyn
2 criticize Qwest's criteria for determining whether or not competitive losses have
3 occurred—arguing that even the loss of a single line to resale could trigger a
4 request for competitive zone classification—and both appear to argue that market
5 share is the primary indicator of the emergence of competition.

6 **Q. PLEASE SUMMARIZE YOUR RESPONSE TO THESE CLAIMS.**

7 A. In responding to these witnesses, I place special emphasis on the following issues:

8 1. Market share used in isolation is a flawed indicator of present and future
9 competition.
10 2. Past and current market share are of limited predictive value in assessing the
11 state of competition.
12 3. Dr. Selwyn and Dr. Collins ignore or attack other indicators of competitiveness
13 which are useful in the present context.
14 4. There are regulatory precedents that the Commission should keep in mind
15 when faced with Qwest's request for competitive zone designation.
16

17 **A. Market Share is Not a Reliable Predictor of Future Behavior**

18 **Q. DR. COLLINS (AT 2-5) AND DR. SELWYN (AT 7-9) IMPLY THAT QWEST HAS**
19 **NOT LOST SUFFICIENT MARKET SHARE AND, THEREFORE, SHOULD NOT**
20 **QUALIFY FOR PRICING FLEXIBILITY OF THE KIND IT IS SEEKING IN ITS**
21 **APPLICATION. DO YOU AGREE?**

22 A. No. I believe the emphasis placed by both witnesses on the market share measure
23 for assessing the merits of Qwest's application is incorrect for several reasons.
24 First, measuring market share loss in terms of lines says less about the intensity of
25 competition or about the stakes for which the competitors are playing than market

share loss in terms of alternative measures such as revenues or profits. Second, market share measured for *outcomes* (such as lines sold or revenues/profits earned) says less about the ability of firms to act strategically in the market than market share measured for *determinants* of those outcomes (such as capacity). Third, when a market is moving in the direction of *decreasing* concentration, the market share measure says less about expected future behavior of the competitors than when the market is moving in the direction of *increasing* concentration, say, because of a horizontal merger or acquisition. Fourth, market share is not a sufficient indicator of either the presence or absence of effective competition or of the strength or fragility of competition. Finally, market share is only a supporting statistic that must always be used in conjunction with other, more important indicators of market behavior such as entry and exit conditions.

Q. PLEASE EXPLAIN WHY MEASURING MARKET SHARE IN TERMS OF LINES IS NOT VERY INFORMATIVE ABOUT THE INTENSITY OF COMPETITION OR THE STAKES FOR WHICH RIVAL FIRMS ARE COMPETING.

A. ILECs and CLECs do not compete for lines *per se*, but rather for that which lines make possible, namely, revenues and profits. If *every* line sold generated exactly the same amount of revenue or profit, then that distinction would not matter. But, that is rarely, if ever, the case. Two facts are particularly important in this context.

1. ILECs and CLECs sell not merely access lines to customers but also other services that can be delivered over those lines. As competition, deregulation, and liberalization push those carriers increasingly toward offering comprehensive packages of services (along with single-source billing

convenience), the loss of each line could mean the loss of more than just the revenue associated with the line and basic local exchange service itself.

2. A relatively small proportion of customers or, more precisely, access lines typically accounts for a relatively large proportion of the revenues (and profits) earned by a carrier. This is true of both business and residential customers, though that observed discrepancy may be more pronounced for business customers.

Taken together, these two facts explain why measuring market share loss in terms of lines may *understate* the real intensity of competition, i.e., the real degree of competitive loss. Suppose 20 percent of the lines served by a LEC account for 60 percent of its revenues. If all of those lines were lost to competitors, that LEC—which initially served 100 percent of lines—would be left with 80 percent market share in terms of lines, but only 40 percent market share in terms of revenue. There is no question that a firm that loses 60 percent of its revenues despite losing only a moderate proportion of the lines it serves is considerably worse off than before. Although this example is fictitious, it demonstrates how seriously the real impact of competition may be understated by using a line-based measure of market share.

Q. WHY IS MARKET SHARE MEASURED IN TERMS OF OUTCOMES (LIKE LINES OR REVENUES) LESS INFORMATIVE ABOUT A FIRM'S POTENTIAL BEHAVIOR THAN MARKET SHARE MEASURED IN TERMS OF DRIVERS OR DETERMINANTS OF THOSE OUTCOMES?

A. Market share has no inherent meaning or value to a firm: it is possible for a firm to have disproportionately large market share and, yet, not be able to extract any undue advantage from it. Market share only matters if it places the firm in a

position to extract extra profit from the industry or market in which it operates. Economists typically examine whether a firm with a large market share also has market *power*, i.e., the ability to influence the market price to its advantage. In many instances, a firm with a large market share may *not* have that kind of power, such as when the market is effectively *contestable* and barriers to entry and exit are low or non-existent or when the firm in question is regulated and its prices are subject to regulatory approval.

Measuring market share in terms of *capacity* or the stock of productive facilities instead gives a more reliable predictor of the firm's future (strategic) behavior. The capacity-based share measures the total volume of output that the firm's installed productive facilities could produce. For this reason, in industries characterized by fixed costs, a firm's capacity is a determinant or driver of outcomes such as the number of lines sold or revenue dollars earned. Larger capacity usually translates into an ability to serve greater volumes of existing or new demand. The capacity share measure is sometimes depicted directly in terms of the size of the facilities themselves (e.g., the number of route-miles of installed fiber from which various services could be provided).

A market share based on outcomes, e.g., revenue, does not automatically say anything about the firm's ability to restrict or retard competition by acting strategically. A capacity share measure, on the other hand, better conveys just how much of a barrier to competitive entry could be raised by a firm that uses its installed capacity as a strategic instrument. For example, a firm that has built up

substantial *excess* capacity, i.e., capacity beyond the level needed to serve current volumes of demand, would have the ability to quickly and comprehensively meet any sudden surge (or even gradual increase) in demand, even before any actual or potential competitor is able to deploy new or additional facilities for doing so.[24] Therefore, a capacity-related measure of market share is a more meaningful indicator of potential barriers to entry or strategic behavior by a firm and, hence, a predictor of potential market power.

Market share measures based on current or past firm performance outcomes often have little predictive value for future firm behavior with respect to its competitors. Although these measures may shed some light on past or current market circumstances, they may say little or nothing about a *dynamic* market in which the composition of participating firms and their output and pricing actions change frequently.

Q. WHY IS MARKET SHARE (OR CHANGE IN SHARE) LESS MEANINGFUL WHEN CONCENTRATION IN A MARKET IS DECREASING THAN WHEN IT IS INCREASING?

A. Markets change and evolve over time as production conditions change, new products are introduced, the regulatory climate changes, and a whole host of other factors also evolve. In the U.S., federal antitrust authorities, e.g., the DOJ and the

[24] The FCC has repeatedly found that excess capacity in a market is a sufficient constraint on the exercise of market power by the dominant firm in that market (i.e., the firm with the highest revenue market share). See, e.g., the *AT&T Non-Dominant Order*, at ¶¶58-62.

FTC, have traditionally monitored changes in market share only when events in the market have given rise to *increasing* market concentration. It is commonplace for these agencies to evaluate the potential state of competition in a market when, e.g., mergers happen between competing firms or when one firm acquires a competitor. For this purpose, the FCC relies on the Herfindahl-Hirschman Index ("HHI") to measure the change in market concentration following a merger or acquisition. The HHI is simply the sum of the squared market share of each firm in a market.[25] To use this index for antitrust purposes, the DOJ published two sets of guidelines and established certain benchmark values of the HHI for evaluating the state of potential competition following a merger or acquisition.[26] However, as is evident from the way the DOJ uses the HHI, it is not so much the actual *level* of the HHI itself that the DOJ monitors closely as it is the *increase* in the HHI following a merger or acquisition. The greater the increase in the HHI, the more worrisome the consequences of the market event would appear to be.

HHI values between 1,000 and 1,800 trigger no alarms from an antitrust perspective. However, these are arbitrary benchmarks based on a judgment of what the HHI would be in a market in which market power is likely to be absent. But, does that mean that market power can *never* exist in a market when the HHI is

[25] Theoretically, the range of the HHI is between 10,000 and zero. In a market with a single firm (pure monopoly), the market share is 100 percent and the HHI is 100×100=10,000. At the other extreme, if there are thousands of competing firms, each with an infinitesimally small market share, then the sum of their respective squared market shares would be quite close to zero.

[26] The guidelines and benchmarks in question are described in the *1984 Merger Guidelines* and the *1992 Horizontal Merger Guidelines*, both issued by the DOJ (the latter in association with the FTC).

less than 1,800? Alternatively, must market power *necessarily* arise in a market in which the HHI exceeds 1,800? The answer to both questions is "no." A particular value of the HHI is neither necessary nor sufficient for market power to exist or be exercised. For this reason, the DOJ typically confines its antitrust analysis to judgments about how steeply the HHI *increases* because of specific market events, rather than what level the HHI attains in the process.

There is an important asymmetry between increasing and decreasing concentration in a market and, for this reason, the HHI is typically of no practical value when concentration is decreasing. When a market with a single firm is opened to competition, the HHI—measured on the basis of whatever outcome or driver—necessarily starts out at its ceiling value of 10,000 (100 percent squared) and then declines as that firm loses market share to new entrants. Naturally, it takes considerable time and effort on the part of those entrants to bring about significant erosion in the market share of the incumbent firm. Does that mean that the HHI in that market would have to fall from 10,000 to near 1,800 before the market could be declared competitive? Absolutely not. The critical test there is not whether the HHI has fallen precipitously but, rather, whether the incumbent firm has the ability to exercise market power even in the early stages of competition when the HHI is necessarily high. Without that ability to exercise market power, a high HHI says nothing about the actual and potential state of competition in the market. This fact is particularly true for regulated telephone companies whose

1 initial market share of 100 percent was due to regulation rather than to any inherent
2 characteristic of the firm or the technology.[27]

3 **Q. PLEASE EXPLAIN WHY THE HHI IS AN INADEQUATE INDICATOR OF**
4 **MARKET BEHAVIOR IN THESE CIRCUMSTANCES.**

5 A. First, it is obvious that prior to the authorization of local exchange competition
6 (under Sections 251 and 252 of the Telecommunications Act of 1996), each market
7 was served by a single LEC and, therefore, had an HHI of 10,000. However,
8 because that LEC's service prices were all subject to regulatory approval and
9 control, there could be no prospect of the anticompetitive behavior that an HHI of
10 10,000 would otherwise signify.

11 Second, the market for interstate long distance services is now widely
12 considered to be competitive. Indeed, the once dominant firm in that market—
13 AT&T—is no longer price regulated. Yet, according to the latest revenue market
14 share statistics, the HHI in that market is 2,641 and, in 1995, when AT&T was
15 declared a non-dominant carrier by the FCC, the HHI was 3,197.[28] How, then,
16 could that market be viewed as competitive?

17 The answer is straightforward: there is significant excess capacity in the
18 long distance market. Among them, the four largest inter-exchange carriers
19 ("IXCs")—AT&T, MCI-WorldCom, Sprint, and Qwest—have several times more

[27] See W.M. Landes and R.A. Posner, "Market Power in Antitrust Cases," *Harvard Law Review*, 94, 1981.

[28] FCC, Common Carrier Bureau, *Trends in Telephone Service*, March 2000, Table 11.3.

capacity than is needed to serve the current level of demand for long distance services.[29] More importantly, each of the largest three of these IXCs *individually* has enough installed capacity to be able to serve the demand of the others' customers besides its own.[30] As a consequence, there is little ability on the part of any of the large facilities-based IXCs to exercise strategic control over the market price.

Third, strict reliance on the DOJ's HHI benchmarks can lead to absurd conclusions. A market with four firms that all have the *same* market share (i.e., 25 percent) would have an HHI of 2,500—well in excess of the 1,800 benchmark level. Yet, could anyone seriously characterize such a market as having a single firm capable of exercising market power? Of course not. There is a remarkable corollary to this example: 2,500 is also the *lowest* HHI that could ever be achieved in a market with only four firms.[31] Thus, no amount of erosion of Qwest's market share could *ever* reduce the HHI in that market below the 1,800 benchmark level. Even if Qwest were to disappear altogether from that market, the HHI would not sink to or below 1,800. No sensible public policy in Arizona could be based on the

[29] For a sense of just how much capacity growth has occurred in the long distance market, see FCC, Common Carrier Bureau, *Fiber Deployment Update, End of Year 1998*, September 1999, Table 1 which indicates that IXCs' fiber route miles have about doubled in the last decade and grown eight-fold since 1985.

[30] This fact was first recognized by the FCC in its *AT&T Non-Dominant Order*, ¶70. AT&T itself made the same point and rejected market share as a valid measure of market power, pointing to the excess capacity in the IXC market as a constraint on the ability to restrict output. *Id.*, ¶42.

[31] In fact, it would take between five and six equal-share firms to reduce the HHI to 1,800 or below. But, even with four equal-share firms, as long as collusion—tacit or overt—is prohibited, no one can seriously argue that the market cannot be competitive.

1 faulty expectation that with enough reduction of Qwest's market share, the market
2 could safely be declared a competitive zone.

3 Finally, suppose the market has a single facilities-based firm with 40 percent
4 market share and 30 resellers, each with 2 percent market share. Despite such a
5 lopsided market structure, the HHI in that market would only be 1,720, well within
6 the 1,800 benchmark level. Does that mean that market power could not be
7 exercised in that market? Not necessarily because that depends on the type of
8 resale permitted. If resale is based on a wholesale discount off the retail price set
9 by the lone facilities-based carrier and, if that retail price is higher than what would
10 prevail in a competitive market, then the resellers would likely charge prices that
11 are higher than the competitive price as well. By not being charged the competitive
12 price, consumers would be worse off, and the resellers would, in effect, be strung
13 along with the market power of the facilities-based carrier that set the high retail
14 price in the first place. On the other hand, if resale is conducted on the basis of
15 volume or term discounts, then the lone facilities-based carrier would, by raising its
16 retail price, risk losing market share to resellers who could effectively undercut its
17 price.

18 **Q. WHY IS A MARKET SHARE MEASURE INADEQUATE FOR ASSESSING THE**
19 **PRESENCE, ABSENCE OR STRENGTH OF COMPETITION?**

20 A. It should be clear from the above discussion that market share *per se* is not the
21 item that should interest public policymakers; rather it is whether the conditions
22 exist for one or more firms in the market to exercise market power. As the

examples I provided demonstrate, it is hazardous to draw inferences about a firm's market power by looking only at its market share. When competition is present in a market (and is strong), no single firm is able to exercise market power. Therefore, rather than focusing on market share, I would urge the Commission to examine whether indicators of market power are present in each of the wire center markets for which Qwest is seeking a competitive zone declaration.

B. Dr. Selwyn And Dr. Collins Ignore Other Indicators Of Competitiveness

Q. HOW DO YOU RESPOND TO DR. COLLINS' IMPLICATION [AT 3] THAT RESOLD LINES AND UNE PROVISIONING ARE MERELY REVENUE STREAM SHIFTS AND SHOULD NOT BE VIEWED AS FULL MARKET SHARE LOSSES?

A. While Dr. Collins has correctly noted that under resale and UNE provisioning, Qwest is likely to replace its retail revenues with wholesale revenues, it is hard to see why that fact is relevant for determining whether Qwest retains market power. If CLECs can use Qwest's wholesale services to compete against Qwest's retail services, Qwest cannot price its retail services with impunity. Dr. Collins' claim that Qwest doesn't lose everything when it loses a customer is correct but irrelevant in assessing Qwest's ability to hold the price of retail services above a competitive market level. Even in competitive zones, Qwest's wholesale prices remain regulated, so that any attempt by Qwest to raise retail prices could be defeated by CLECs using Qwest's UNEs to compete. As Staff Witness Shooshan observed,

> ...if regulators control the wholesale of input prices, there is seemingly little need for additional controls on retail or output prices in a competitive

> environment. As long as there is nondiscriminatory access by competitors to bottleneck network components and ILECs must impute appropriate costs to the services they offer and are prohibited from pricing below those costs, there is no obvious reason to think that efficient retail rates could not be established.[32]

Moreover, though Qwest may receive wholesale revenue in place of retail revenue when its retail lines are resold or substitute services are provided using Qwest-supplied UNEs, Qwest stands to lose a lot more than just the spread between retail and wholesale revenues when it loses a customer. One of the most important sunk costs of entry is that associated with building a loyal and profitable customer base. Resale and UNE-based entry provides potential customers an opportunity to develop that customer base *without* incurring that sunk cost. Qwest competes not merely to sell access lines but other retail services as well—often in service packages. Thus, in time, as a reseller or UNE-user takes enough customers away from Qwest for it to be able to deploy its own facilities and provide its own services, Qwest's loss from losing a customer will include not merely the spread between retail and wholesale revenues associated with the access line but also all other service revenues and contribution that previously accrued from that customer. In an era of competition by service packages, that will not be a trivial loss. In that respect, Dr. Collins' oversight of the true extent of the competitive loss comes from failing to take a longer term view of competition in the market.

[32] Haring and Shooshan, *op. cit.* at 14.

Q. HOW DO YOU RESPOND TO DR. SELWYN'S ASSERTION [AT 10] THAT COLLOCATION "PROVES VERY LITTLE" ABOUT THE PRESENCE OF COMPETITION—PRESENT AND FUTURE—IN A MARKET?

A. Dr. Selwyn's position is surprising, given the importance that the FCC places on collocation as a measure of competition in a market. For example, the FCC has divided up the process of acting on an initial request for regulatory relief and pricing flexibility into two phases. In Phase I, the FCC planned to grant a price cap ILEC pricing flexibility for special access and dedicated switched transport services if the ILEC could demonstrate that:

1. Competitors were collocated in 15 percent of the wire centers in the Metropolitan Statistical Area ("MSA") in which the relief was being sought; and,
2. Competitors were collocated in wire centers that accounted for at least 30 percent of the ILEC's revenues from special access (other than channel terminations) and dedicated transport.[33]

The collocation trigger for Phase I relief was based on the FCC's reasoning that collocation with competitive transport was the single best indicator of competitive presence. Moreover, the FCC saw collocation (even more than the leasing of capacity through UNEs) as a strong signal of irreversible or sunk investment, a demonstration of the competitor's commitment to the market, and an effective barrier against predatory or exclusionary pricing by the ILEC. Finally, the FCC found it administratively easier and less costly to establish the presence of irreversible competitive investments by observing the collocation factor directly,

[33] Fifth Report and Order, at ¶95.

1 rather than by trying to verify the extent to which competitors had installed their
2 own facilities, undertaken marketing efforts, and competed for the ILEC's
3 customers.[34]

4 Thus, the FCC, like other industry regulators and observers, views
5 collocation as perhaps one of the best indicators of market competitiveness and
6 future market direction, possibly because, from an economic perspective,
7 collocation triggers a large increase in the capacity of a CLEC to serve customers.
8 There is very little support for Dr. Selwyn's contention (at 10) that "from a pragmatic
9 viewpoint, the very fact that competitors' actual gains are so small for customers
10 served over UNE loops suggests that co-location rights alone are insufficient to
11 permit the CLECs to compete."

12 **C. Broad Principles For Assessing Requests For Pricing Flexibility**

13 **Q. ARE THERE SOME OVER-ARCHING REGULATORY AND ECONOMIC**
14 **PRINCIPLES THAT YOU WOULD RECOMMEND THE COMMISSION TAKE**
15 **INTO ACCOUNT WHEN EVALUATING QWEST'S APPLICATION FOR**
16 **DESIGNATION OF COMPETITIVE ZONES?**

17 A. Yes. I would strongly encourage the commission to follow the example of the FCC
18 in according pricing flexibility to ILECs. The FCC has shown an increasing
19 willingness to defer to market forces in circumstances such as those faced by
20 Qwest in the Tucson and Phoenix markets. For example, the FCC has decided to

[34] *Id.*, at ¶¶77-80.

no longer require ILECs to file zone pricing plans in advance of tariff filings, presuming instead that market forces, along with restrictions on zone sizes, would force ILEC zone prices to reflect cost characteristics.[35] Also, in first undertaking reform of interstate switched access charges, the FCC adopted a market-based, rather than an overtly regulatory, approach.[36] The FCC explained that deference thus:

> ... we will not require incumbent LECs to demonstrate that they no longer possess market power in the provision of any access services to receive pricing flexibility, for two reasons. First, ... regulation imposes costs on carriers and the public, and the costs of delaying regulatory relief outweigh any costs associated with granting that relief before competitive alternatives have developed to the point that the incumbent lacks market power. Second, non-dominance showings are neither administratively simple nor easily verifiable. As several BOCs note in their forbearance petitions, the Commission previously has based non-dominance findings on several complex criteria, including market share and supply elasticity. Market share analyses require considerable time and expense, and they generate considerable controversy that is difficult to resolve. ... Measuring supply elasticity also can be controversial[.][37]

and

> ... because regulation is not an exact science, we cannot time the grant of regulatory relief to coincide precisely with the advent of competitive alternatives for access to each individual end user. We conclude that the

[35] FCC, *In the Matter of Access Charge Reform, Price Cap Performance Review for Local Exchange Carriers, Interexchange Carrier Purchases of Switched Access Services Offered by Competitive Local Exchange Carriers, Petition by QWEST Communications, Inc. for Forbearance from Regulation as a Dominant Carrier in the Phoenix, Arizona, MSA*, Fifth Report and Order and Further Notice of Proposed Rulemaking ("*Access Reform Fifth Report and Order*"), CC Dockets 96-262, 94-1, 98-63, and 98-157, released August 27, 1999, at ¶65.

[36] FCC, *In the Matter of Access Charge Reform, Price Cap Performance Review for Local Exchange Carriers, Transport Rate Structure and Pricing, End User Common Line Charges*, First Report and Order ("*Access Reform First Report and Order*"), CC Dockets 96-262, 94-1, 91-213, and 95-72, released May 16, 1997.

[37] *Access Reform Fifth Report and Order*, at ¶90. Various footnotes omitted.

> costs of delaying regulatory relief outweigh the potential costs of granting it before IXCs have a competitive alternative for each and every end user. The Commission has determined on several occasions that retaining regulations longer than necessary is contrary to the public interest. Almost 20 years ago, the Commission determined that regulation imposes costs on common carriers and the public, and that a regulation should be eliminated when its costs outweigh its benefits. More recently, the Commission recognized that retaining tariffing requirements for non-dominant IXCs imposes costs in the form of a less efficient market. In Section III of this Order, we conclude that the new service rules currently in effect limit incumbents' incentives to innovate. The Part 69 rate structure can impose costs on an incumbent LEC by limiting its ability to develop rate structures in response to market forces. Thus, retaining the Part 69 rate structure imposes costs on society by perpetuating inefficiencies in the market for interstate access services. The triggers we adopt for Phase II flexibility are sufficient to ensure that incumbent LECs cannot exercise any remaining monopoly power indefinitely. If an incumbent LEC charges an unreasonably high rate for access to an area that lacks a competitive alternative, that rate will induce competitive entry, and that entry will in turn drive rates down. Accordingly, we will not delay Phase II regulatory relief until access customers have a competitive alternative for access to every end user.[38]

Although these principles were adopted in a different context (i.e., forbearance from regulation of exchange access services), they demonstrate a keen appreciation of the losses of social welfare and economic efficiency that can follow from delaying or stretching out the process of relaxing pricing regulations as markets turn competitive. Whenever the benefits from granting pricing flexibility outweigh possible costs of such a policy, the FCC has chosen firmly in favor of relaxing regulation. That may be characterized as the first principle of regulatory prudence observed by the FCC.

[38] *Id.*, at ¶144. Various footnotes omitted.

1 The second principle of regulatory prudence is particularly important in
2 Arizona's context. While competition in its most vigorous form is presently
3 occurring in Tucson and Phoenix wire centers, eventually such competition will
4 become state-wide. Does that mean that the Commission should repeat this
5 complex, time-consuming, and contested process every time Qwest submits an
6 application for pricing flexibility in a different part of the state? The FCC has
7 strongly suggested that to proceed in that manner would be unwise, inefficient, and
8 unnecessarily burdensome. Rather, it would be prudent to establish—on the basis
9 of this proceeding—a set of criteria or "triggers" which the Commission could then
10 repeatedly apply, without the need for full-blown contested proceedings, to rule on
11 future Qwest applications for pricing flexibility.

12 **Q. AS BACKGROUND, WHAT PATH DID THE FCC FOLLOW FOR GRANTING**
13 **PRICING FLEXIBILITY FOR EXCHANGE ACCESS SERVICES?**

14 A. The FCC divided up the process of acting on an initial request for regulatory relief
15 and pricing flexibility into two phases. I discussed Phase I in rebutting Dr. Selwyn's
16 assertion that collocation is not an important indicator of market competitiveness.

17 In Phase II, the FCC required that, in addition to a firm commitment to
18 competition, an ILEC's rivals should demonstrate a significant market presence.
19 This added condition was explained by the FCC thus:

20 Because Phase II grants incumbent LECs considerably greater flexibility
21 than Phase I, we adopt triggers to ensure that competitors have
22 established a significant market presence, *i.e.*, that competition for a
23 particular service within the MSA is sufficient to preclude the incumbent
24 from exploiting any monopoly power over a sustained period. ... By

> significant market presence, we mean that IXCs [purchasers of access service] have a competitive alternative for dedicated transport services needed to reach the majority, although not necessarily all, of their long distance customers throughout the MSA, and that almost all special access customers have a competitive alternative.[39]

In effect, the FCC permitted greater pricing flexibility in Phase II as evidence of a stronger competitive presence became available through collocation statistics.

Q. DID THE FCC TIE THESE TRIGGERS FOR PRICING FLEXIBILITY TO MARKET SHARE OR ANY REQUIREMENT THAT THE ILEC IN QUESTION BE FIRST FOUND NON-DOMINANT?

A. No. In fact, the FCC explicitly rejected that tie-in:

> We conclude that the Phase II regulatory relief we grant below is warranted when competitors have established a significant market presence in an MSA, and we need not require a showing of non-dominance. Upon a Phase II showing, we will not grant incumbent LECs all the regulatory relief we afford to non-dominant carriers. Specifically, incumbent LECs in Phase II are still required to file generally available tariffs, while non-dominant LECs and CAPs are permitted, but not required, to file tariffs. Furthermore, our relief is limited to certain services and certain areas, and will be granted only upon satisfaction of the triggers we adopt here. Thus, Phase II relief is not tantamount to non-dominant treatment.[40]

The FCC did not find that, to grant pricing flexibility in areas or limited markets with competition, it had to go through extensive analyses of demand and supply conditions, market share, or prices. Instead, it was sufficient to establish that a

[39] *Id.*, at ¶¶141-142.

[40] *Id.*, at ¶151. Footnote omitted.

1 countervailing competitive presence had emerged in the market or area in which
2 pricing flexibility was being sought.

3 VI. PRICING PAYPHONE ACCESS LINES ABOVE INCREMENTAL COST IS NEITHER 4 INEFFICIENT NOR ANTICOMPETITIVE.

5 **Q. WHAT PAYPHONE ISSUES ARE RAISED IN THIS CASE?**

6 A. The testimony of Michael J. Ileo, on behalf of the Arizona Payphone
7 Association ("APA") raises several economic and regulatory issues including (i)
8 how payphone access line services provided by Qwest to payphone service
9 providers ("PSPs") including independent payphone service providers ("IPPs") and
10 Qwest's own payphone service should be priced and (ii) whether those prices
11 conform to the statutory requirements of the Telecommunications Act of 1996 ("TA
12 96") and the standards established by the FCC to implement those requirements.

13 **Q. PLEASE SUMMARIZE YOUR POSITION ON THOSE ISSUES.**

14 A. Dr. Ileo argues that (i) Qwest's current tariffed rates for payphone access line
15 services violate TA 96 and tests established by the FCC for the pricing of those
16 services, and (ii) were those rates to be affirmed by the Commission, economic
17 harm could occur to the competitors in the local market in Arizona.

18 Upon careful consideration of those claims (especially in light of the record
19 developed by the FCC on those matters), I conclude that Qwest's tariffed rates in
20 Arizona appear to satisfy all statutory requirements, are fair and reasonable,

conform to efficient pricing principles, and do not portend ill for the growth of competition in the local market in the state.

Q. HOW IS YOUR REBUTTAL TESTIMONY ORGANIZED?

A. This section is composed of three parts. First, I provide some background information about the payphone industry that is germane to my subsequent discussion of the economic issues raised in the testimony of Dr. Ileo. Second, I demonstrate that Dr. Ileo errs in his analysis of the statutory requirements that Qwest's rates for payphone services must satisfy for this Commission to reaffirm them. Third, I provide conclusions based on my analysis.

Q. PLEASE DESCRIBE THE CHARACTERISTICS OF TELEPHONE SERVICE PROVIDED THROUGH PAYPHONES.

A. Payphones may be used to place (and receive) most kinds of telephone calls that are traditionally made from privately-owned telephones by residential and business subscribers to the public switched network. However, payphones differ from privately-owned telephones in some important respects.

1. Unlike privately-owned telephones, payphones are owned and maintained by PSPs.
2. PSPs install their payphones on property provided—typically, commercially leased—by "location providers." Privately-owned telephones are typically located on the premises of the telephone owners themselves.
3. Payphone service typically involves four parties: the PSP that owns the payphone, the location provider that provides the site for installing the payphone, the telecommunications carriers that actually carry calls from the payphone to their eventual destinations, and the payphone user. In contrast, service from privately-owned telephones only involves two parties: the telephone owner and the carriers used to place and receive calls.

4. Unlike privately-owned telephones for which services are typically billed on a monthly basis, payphone users must pay at the time they make their calls.

Just like privately-owned telephones, payphones may be used to make local, long distance toll, and toll-free (800 number) calls. However, payphone users have the option of either paying in cash (i.e., receive service on a "coin" basis) or charging to telephone calling cards or other parties (i.e., receive service on a "coinless" basis).

Payphones are typically presubscribed to designated interexchange carriers ("IXCs") or operator service providers ("OSPs") for the carriage of inter- and intrastate long distance calls or to designated local exchange carriers ("LECs") for the carriage of local and intrastate long distance calls.[41] The payphone owners, i.e., the PSPs, may, therefore, not be telecommunications carriers themselves. As I explain below, this fact has an important bearing on the structure of the payphone market. It also means that revenues earned from payphone users are shared among three parties: the carriers, the IPPs, and the location providers (who receive "commissions").

Q. PLEASE DESCRIBE THE STRUCTURE OF THE PAYPHONE MARKET.

[41] OSPs are usually IXCs that provide operator-assisted long distance service. They may be "presubscribed" (i.e., OSPs to whom long distance payphone calls would be automatically sent) or "non-presubscribed" (i.e., OSPs whom payphone callers may reach by use of special access codes). An access code is a sequence of numbers that needs to be dialed to connect the caller to the OSP associated with that sequence, as opposed to the OSP presubscribed to the originating line. Access codes include 1010XXX in equal access areas and "950" Feature Group B dialing (950-0XXX or 950-1XXX) anywhere, where the three-digit XXX denotes a particular IXC. Some OSPs use an 800 number as an access code. Dial around calls are all calls that bypass any presubscribed carrier. The Telephone Operator Consumer Services Improvement Act ("TOCSIA") of 1990 prohibits PSPs from blocking access to non-presubscribed OSPs (by access code or dial around calls) by payphone users.

A. In order to assemble its retail payphone service, a PSP must use an access line to connect its payphone set to the public switched network (at a central office) and provide local usage services and various features (e.g., central office blocking and screening and, optionally, billed number screening). Although, from an economic standpoint, the access line and other services/features would appear to be intermediate goods, i.e., resources needed to support payphone use, they are viewed from a regulatory perspective as tariffed *business* exchange services and the PSPs themselves are viewed as (retail) business end-users.

Qwest provides these components of payphone service in two forms: Basic PAL ("BPAL") and Smart PAL ("SPAL").[42] Traditionally, Arizona IPPs have purchased these services from Qwest, the *incumbent* LEC. However, as *competing* LECs ("CLECs") expand their operations in the state, the access line services needed for payphone service are becoming increasingly available from non-Qwest sources.[43]

BPAL and SPAL are both tariffed business services that have traditionally been priced at or near the level of rates for *business* local exchange service. The prices of these payphone services have also traditionally included contribution toward the

[42] http://www.uswest.com/wholesale/win/pal_description.html. BPAL is designed to work with "smart" payphone sets equipped with software for rating calls, collecting coins, and diagnosing maintenance problems. In contrast, SPAL is designed to work with "dumb" payphone sets, i.e., those which rely on central office-based software for carrying out the same functions.

[43] CLEC competition is growing in Arizona. It is my understanding that, as of August 1, 2000, at least 33 CLECs (a mix of facilities-based carriers and resellers) were certificated to operate in the state and 77 were awaiting Commission approval. According to the FCC, 60 percent of Qwest access lines are served out of offices where CLECs have collocation arrangements (Trends In Telephone, Table 9.6, March 2000).

universal service program under which *residential* local exchange service rates are held at low levels, frequently below cost. Those prices have also included some contribution toward Qwest's shared and common costs.

Q. WHY DO PRICES OF SERVICES LIKE BPAL AND SPAL INCLUDE CONTRIBUTION TOWARD QWEST'S SHARED AND COMMON COSTS?

A. There are broadly two types of cost: (i) direct incremental cost that is incurred when adding or expanding the provision of a specific service (such as BPAL or SPAL), and (ii) shared cost that is not specific to any single service but arises in the process of adding or expanding the provision of several services. A common cost is simply a cost that is shared by *every* service, e.g., that arising from administrative, legal, human resources, and financial functions. Shared and common costs are sometimes referred to as *overhead* costs: unlike direct incremental costs, they cannot be identified with specific services.

While it is economically efficient for service prices to be set as close to underlying incremental costs as possible, in certain capital-intensive industries like telecommunications that form of pricing is simply not feasible. In those industries, firms typically experience relatively high fixed and shared and common costs and relatively low service-specific incremental costs. Setting prices to recover only those incremental costs would, therefore, prevent firms from recovering their substantial shared and common costs and from breaking even (making a normal return on capital). In those circumstances, economic theory prescribes specific rules for marking service prices above incremental costs so as to recover *all* costs

in an economically efficient manner. This is the rationale for including contribution toward shared and common costs in the prices of BPAL and SPAL service.

Q. IS THE PAYPHONE INDUSTRY COMPETITIVE TODAY?

A. Yes. Retail payphone service has been declared to be competitive by the FCC, although it has not yet been freed totally from all federal or state regulation. At Divestiture in 1984 (when the old Bell System was broken up under a consent decree), payphone service was considered a part of basic local service and assigned entirely to the Bell Operating Companies ("BOCs")—of which Qwest (then U S West) is one—rather than to AT&T or other IXCs. The advent of smart payphones in the mid-1980s and a subsequent FCC reclassification of smart payphones as terminal equipment rather than network elements led to the emergence of non-LEC providers of payphone service. In the years since, almost 1.75 million LEC payphones have been placed in service nationwide,[44] and the number of IPP payphones has long since surpassed 350,000.[45]

Retail payphone service is competitive today, and the FCC and state commissions retain authority over several aspects of their operation. Since the passage of TA 96, the FCC has issued a series of orders (collectively the

[44] FCC Common Carrier Bureau, *Statistics of Communications Common Carriers*, 1998/99 edition, Table 2.10.

[45] FCC, *In the Matter of Implementation of the Pay Telephone Reclassification and Compensation Provisions of the Telecommunications Act of 1996*, CC Docket No. 96-128, Notice of Proposed Rulemaking ("NPRM"), released June 6, 1996, ¶ 6 (citing an *ex parte* letter, dated April 24, 1996, from Cincinnati Bell to the Common Carrier Bureau).

Payphone Orders)[46] implementing the provisions of Section 276 of TA 96 that affect various aspects of the payphone industry. In the course of issuing these orders, the FCC has stated and reaffirmed its belief that the payphone industry is competitive. For example:

> ... the payphone industry has the potential to be very competitive. Entry into the payphone business appears to be easy. The ability to purchase a payphone, secure a location contract, obtain a payphone line from the LEC, and maintain the payphone are, together, the minimal technical requirements to enter into the payphone business. In addition, payphone lines are part of the tariffed offerings of local exchange carriers and, in some jurisdictions, only a simple business line is required to the [sic] payphone service. As contracts come up for renewal, or as location providers find it economical to put in new payphones, PSPs [payphone service providers] and [IXCs] routinely make themselves available to negotiate new agreements among themselves and the location provider.
>
> A payphone can be removed and used at another location, which facilitates entry and exit. If a PSP can easily redeploy its assets, it will be more willing to place a payphone in response to a small increase in price, because the risk of such placement is lower. In addition, there appear to be no significant scale or scope economies or network externalities that would impede entry of new firms. As a result, barriers to entry appear to be very low. In fact a large number of firms, both large and small, have entered the industry since it was initially opened to competition in 1984, and those firms have provided competition in at least some segments of the payphone market.[47]

[46] FCC, *In the Matter of Implementation of the Pay Telephone Reclassification and Compensation Provisions of the Telecommunications Act of 1996*, CC Docket No. 96-128, Report and Order ("FCC 96-388 Order"), released September 20, 1996; Order on Reconsideration ("FCC 96-439 Order"), released November 8, 1996; Order (Common Carrier Bureau DA 97-678, "Bureau Waiver Order"), released April 4, 1997; Order (Common Carrier Bureau DA 97-805, "Second Bureau Waiver Order"), released April 15, 1997; Second Report and Order ("FCC 97-371 Order"), released October 9, 1997.

[47] FCC 96-388 Order, ¶¶ 11-12. (Footnotes omitted)

Q. GIVEN THE FCC'S FINDING THAT PAYPHONE SERVICE IS COMPETITIVE, HOW HAVE ITS ACTIONS TAKEN THROUGH THE PAYPHONE ORDERS AFFECTED THE PAYPHONE INDUSTRY?

A. Through its *Payphone Orders* the FCC has laid out a roadmap for eventually removing all regulation and tariffing requirements from the payphone industry. Its finding that the industry is currently competitive and has the potential to become even more so has prompted the FCC to initiate steps to further reduce entry barriers in this industry. The FCC has taken four specific steps.

- First, acting on the mandate provided by Section 276 of TA 96 (discussed later), the FCC has decreed that BOC-owned and operated payphones be reclassified as customer premises equipment ("CPE") rather than as network elements, and unbundled from the payphone access and usage services (such as BPAL and SPAL) that are available from BOCs. Such unbundling is intended to prevent any cross-subsidization of BOC payphone service by other BOC services like basic exchange and exchange access.[48]
- Second, the FCC has retained tariffing requirements for BOC-provided payphone access and usage services, particularly where a BOC is itself a provider of retail payphone service. As I discuss later in my testimony, those requirements (or *non-structural safeguards*) involve demonstrating that tariffed rates of payphone access and usage services are cost-based and non-discriminatory and that they pass the new services test to which all price-capped LECs are subject.[49]
- Third, recognizing that its actions, and particularly the non-structural safeguards, eliminate the possibility of anticompetitive pricing of payphone access and usage services by Qwest and other BOCs (or incumbent LECs), the FCC has specifically and pointedly declined to adopt *structural* safeguards such as requiring that BOCs that also provide retail payphone service do so through separate affiliates (that maintain a separate corporate structure and accounting books from the BOCs themselves).[50]

[48] FCC 96-388 Order, ¶¶ 142-144.

[49] *Id.*, ¶ 146.

[50] *Id.*, ¶ 145.

- Fourth, the FCC has specifically and pointedly declined to require that payphone access and usage services provided by Qwest and other incumbent LECs be subject to the same pricing regime that applies under Sections 251 and 252 of TA 96 to interconnection and unbundled network elements ("UNEs").[51]

As for retail payphone service itself, the FCC has instituted per-call compensation mechanisms that would compensate PSPs that receive no revenue whenever payphone customers make toll-free (subscriber 800), dial around long distance (or access code), and debit card calls. Significantly, the FCC has declined to set per-call compensation rates on a cost plus markup basis, insisting instead that retail payphone competition should be trusted to produce efficient market-determined rates.[52]

Q. PLEASE EXPLAIN WHAT SECTION 276 OF TA 96 ENVISIONS FOR PAYPHONE SERVICE.

A. Section 276 of TA 96 requires, *inter alia*, that any BOC that provides payphone service: (i) shall not subsidize its payphone service directly or indirectly from its telephone exchange service operations or its exchange access operations; and (ii) shall not prefer or discriminate in favor of its payphone service. These are the basis for several non-structural safeguards that the FCC has sought to implement through its *Payphone Orders*. The critical requirement is that a BOC's tariffed rates

[51] *Id.*, ¶ 147.

[52] *Id.*, ¶¶ 118-119 (especially, fn. 323).

for payphone access line services pass the "new services test" which evolved as a non-structural safeguard from the FCC's *Computer III* docket.[53]

The new services test—which I describe below—subsumes three specific requirements: that the tariffed rates in question be (i) cost-based, (ii) consistent with the requirements of Section 276 with regard, e.g., to the removal of subsidies from basic exchange and exchange access services, and (iii) non-discriminatory.

Q. WHAT DOES IT MEAN FOR A PRICE OR RATE TO BE "COST-BASED?"

A. A price is said to be cost-based if it is set in some relationship to the underlying economic cost. In general, a cost-based rate is the sum of direct incremental cost and a market-determined markup that recovers other costs. At a minimum, a cost-based rate must recover the direct incremental cost.

Q. DOES THAT MEAN THAT A COST-BASED PRICE SHOULD BE *EQUAL TO* A SPECIFIC MEASURE OF COST?

A. No. A cost-based price may differ from a specific measure of cost for a number of reasons. For example, the price need not be equal to direct incremental cost because of the need to include a contribution toward shared and common costs. As I mentioned before, in certain industries like telecommunications, if all service prices were set exactly equal to their respective incremental costs, the firm would fail to recover all of its costs. Therefore, there are circumstances in which prices of

[53] Amendment of Section 64.702 of the FCC's Rules and Regulations ("Computer III").

1 services must deviate efficiently from their incremental costs in order for the firm to
2 earn a normal return on its investment. Other special circumstances may warrant a
3 greater degree of markup for prices above incremental cost. For example, in the
4 present environment, LECs are obliged to price their residential basic exchange
5 service below the incremental cost of that service. Sustaining such a price is only
6 possible by including contribution toward residential basic exchange service in the
7 prices of some or all of LECs' other services.

8 Basing a price on the underlying cost ensures that the price is cost-causative,
9 i.e., what the customer is asked to pay depends on the cost of the resources that
10 were specifically used to provide the service to the customer. A cost-based price
11 also insures against anticompetitive behavior. For example, a price that is no less
12 than the underlying incremental cost cannot be predatory. Also, a price that is no
13 less than the underlying total service long run incremental cost ("TSLRIC") cannot
14 be receiving a cross-subsidy.[54] Thus, a firm that charges a price that is at least
15 equal to incremental cost or TSLRIC cannot be pricing anticompetitively.

16 **Q. WHAT DOES IT MEAN FOR A PRICE TO CONFORM TO THE REQUIREMENTS**
17 **OF SECTION 276 OF TA 96?**

[54] In economic theory, incremental cost refers only to the additional cost of producing the next increment (or unit) of a service. TSLRIC refers to the additional cost of producing the entire volume of that service. By definition, that includes all variable and fixed costs specific to that service.

1 A. Section 276 of TA 96 forbids the price (here, the prices of Qwest's payphone
2 access line services, BPAL and SPAL) from receiving a cross-subsidy from any
3 basic exchange or exchange access service.

4 **Q. DO YOU AGREE WITH DR. ILEO'S POSITION (AT 21) THAT SECTION 276 OF**
5 **TA 96 REQUIRES THAT PAL RATES NOT CONTAIN SUBSIDIES TO OTHER**
6 **TELECOMMUNICATIONS SERVICES OF ILECS?**

7 A. Absolutely not. Section 276 of TA 96 specifically relates to payphone services, and
8 nowhere in that section does it require that PAL services not contain subsidies (or
9 contribution) to other telecommunications services. To the extent payphone
10 access services contain implicit subsidies, such subsidies are addressed by
11 Section 254 of TA 96 which requires the elimination of all implicit subsidies, to be
12 replaced with explicit support. By doing this, regulators are forced to determine
13 which services, if any, are being subsidized, and can replace implicit mechanisms
14 with explicit mechanisms. Indeed, the FCC has spent considerable time and effort
15 implementing Section 254 of TA 96 in CC Docket No. 96-45. Furthermore, it is
16 impossible to determine whether any particular service (in this case BPAL or
17 SPAL) subsidizes another particular service without looking at the other services—
18 the ones <u>being</u> subsidized. That is why neither the Act nor any FCC rules require
19 the elimination of subsidies (in the form of reduced contribution) from any particular
20 service, payphone access services or otherwise.

Q. HOW DOES DR. ILEO'S INCORRECT SUMMARY OF TA 96'S REQUIREMENTS AFFECT HIS TESTIMONY?

A. Dr. Ileo's incorrect understanding of Section 276 of TA 96 renders many of his arguments baseless. Throughout his testimony he argues (at 9, 14-15, 19, 23, 31, 35, 40, 42, 47, 48, 49) that Qwest's BPAL rates are not in compliance with Section 276 of the Act because the rates are set at a level that subsidize other services. However, Dr. Ileo's understanding of Section 276 is incorrect, as I discuss above, and the argument is wrong. Therefore, in instances where Dr. Ileo bases his arguments on the mandates in Section 276— which constitutes most of his testimony—his arguments should be considered groundless.

Q. DR. ILEO ARGUES (AT 6, 24) THAT "THE PRESENCE OF UNLAWFUL SUBSIDIES ALONG WITH THE GRANTING OF PRICING FLEXIBILITY...COULD ENDANGER THE FURTHER DEVELOPMENT OF LOCAL COMPETITION IN ARIZONA." PLEASE RESPOND.

A. The majority of Dr. Ileo's testimony rests on the argument that PAL services priced above long run incremental costs contain unlawful subsidies. While this argument is baseless, as I describe above, on page 24 of his testimony he makes a slightly different argument—that subsidies could endanger local competition. Although Dr. Ileo does not fully develop his argument, I understand his argument to be that local services are supposedly subsidized by PAL services. Therefore, his argument would be that Qwest has the ability to price anticompetitively below cost for local services, thwarting competition in the local market. Dr. Ileo argues, then, that

1 eliminating subsidies in PAL services will eliminate Qwest's ability to price local
2 services anticompetitively. This argument has no place in assessing payphone
3 access line service rates, and whether they are (i) cost-based, (ii) consistent with
4 the requirements of Section 276 of TA 96, specifically with respect to the removal
5 of subsidies to payphone service from basic exchange and exchange access
6 services, (iii) non-discriminatory, and (iv) able to pass the new services test that
7 applies to price cap LECs. A determination of anticompetitive pricing in the local
8 market requires an analysis of local rates, not PAL rates.

9 **Q. WHAT DOES IT MEAN FOR A PRICE TO BE NON-DISCRIMINATORY?**

10 A. Non-discrimination—another requirement of Section 276 of TA 96—implies that the
11 provider of a service cannot charge different prices to different customers. While
12 price discrimination is fairly common in mature and competitive markets for retail
13 services, Section 276's purpose here is to augment whatever protection is afforded
14 by growing payphone service competition by prohibiting price discrimination for the
15 payphone access line service that both a LEC and its competitor (an IPP) may use
16 to provide payphone service.[55] This safeguard ensures that the LEC that supplies
17 payphone access services does not derive an unfair advantage by charging its own
18 payphone affiliate less for those services than it does its IPP competitors.
19 However, as IPPs are increasingly able to acquire those services from non-Qwest

[55] Price discrimination is not inherently bad unless it confers on the price discriminating firm an unfair competitive advantage. For example, if a firm has monopoly control over an essential wholesale service which both it and (continued...)

1 sources, the *economic* significance of the non-discrimination requirement will
2 decline.

3 **Q. WHAT IS THE NEW SERVICES TEST?**

4 A. The new services test is described in Part 61.49(f)(2) of the *Code of Federal*
5 *Regulations*. It is more fully explained in an amendment of the FCC's Part 69
6 access charge rules[56] that enabled the BOCs to offer unbundled Open Network
7 Architecture ("ONA") services. In its Order in that proceeding, the FCC modified
8 the LEC Price Cap Order new services test to give "additional pricing flexibility to
9 price cap local exchange carriers[.]"[57] As described in Part 61.49(f)(1-2), when a
10 price cap LEC introduces a new service, it is required to submit cost data sufficient
11 to establish that the new service will generate a "net revenue increase" and that the
12 new service will not recover "more than a reasonable portion of the carrier's
13 overhead costs." The purpose of this test is clearly to insure that the new service—
14 here, BPAL or SPAL—is not priced anticompetitively.

15 It is obvious that a price that passes the new services test must be cost-based
16 because it would have to be set in some relationship to underlying cost, namely, at

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(...continued)

its competitors must use to provide a retail service, then charging itself a lower price for the wholesale service than the price it charges its competitors can be an unfair and anticompetitive form of price discrimination.

[56] *In the Matter of Amendments of Part 69 of the Commission's Rules Relating to the Creation of Access Charge Subelements for Open Network Architecture Policy and Rules Concerning Rates for Dominant Carriers*, FCC 91-186, Report and Order, Order on Further Reconsideration and Supplemental Notice of Proposed Rulemaking ("FCC 91-186 Order"), CC Docket Nos. 89-79 and 87-313, released July 11, 1991.

[57] *Id.*, ¶ 1.

or above TSLRIC. A price that is at or above TSLRIC would also, by definition, not be cross-subsidized—by basic exchange, exchange access, or any other service—and, thus, conform to Section 276 of TA 96. Finally, it cannot be discriminatory if it applies equally to Qwest's own payphone affiliate and to that affiliate's IPP competitors.

Q. HAS THE FCC DETERMINED A SPECIFIC IMPLEMENTATION OF THE NEW SERVICES TEST?

A. No. While the FCC has addressed the issue on various occasions, it appears not to have settled on one definitive interpretation of the new services test. In most instances I am aware of, a showing that the price is some multiple (with a minimum of one) of the direct cost has—where uncontested—been sufficient to pass the test. Only in circumstances in which other parties have contested a LEC's proposed price, has the FCC felt compelled to rule on whether the proposed price unreasonably exceeds the underlying direct cost.[58] This is sufficient reason for *this* Commission to interpret the new services test flexibly, based on appropriate economic reasoning and sound public policy.

[58] For example, see FCC rulings on payphone-related tariff filings by Bell Atlantic and GTE in *In the Matter of Local Exchange Carriers' Payphone Functions and Features* (CC Docket No. 97-140), *Bell Atlantic Telephone Companies Revisions to Tariff F.C.C. No. 1* (Transmittal Nos. 962 and 966), *GTE System Telephone Companies Revisions to Tariff F.C.C. No. 1* (Transmittal Nos. 206 and 1112), *GTE System Telephone Companies Revisions to Tariff F.C.C. No. 1* (Transmittal Nos. 1095 and 217), Memorandum Opinion and Order ("FCC 97-392 Order"), released October 29, 1997.

Q. IN YOUR OPINION, WHAT SHOULD THIS COMMISSION CONSIDER WHEN CONDUCTING THE NEW SERVICES TEST?

A. There are, in my view, two important aspects to the new services test. The first concerns the choice of the *cost standard* that best measures the "direct cost" element of the new services test. The second concerns a determination whether the markup or *overhead loading* by which the tariffed rate exceeds the direct cost is reasonable.

Q. HAS THE FCC EVER REQUIRED THE ADOPTION OF A SPECIFIC COST STANDARD FOR THE NEW SERVICES TEST?

A. No. Apart from ruling out one specific cost methodology (discussed below), the FCC has never clearly indicated what cost standard should be selected for the purposes of the test. However, in the past it did state:

> Under our approach, a LEC introducing new services will be required to submit its engineering studies, time and wage studies, or other cost accounting studies to identify the direct costs of providing the new service, absent overheads, and must also satisfy the net revenue test. ... LECs may develop their own costing methodologies, but they must use the same costing methodology for all related services.[59]

Even when the FCC had an opportunity in 1997 to revisit this issue, it issued no new instructions.[60] That is in sharp contrast to the level of detail that the FCC has gone to in directing how a new cost methodology should be employed to determine costs and rates for UNEs (discussed below).

[59] FCC 91-186 Order, ¶ 42.

[60] FCC 97-392 Order.

Q. DR. ILEO [AT 5] EQUATES THE COMMISSION'S TASK IN THIS PROCEEDING TO THAT IN COMMISSION DECISION NO. 60635 (IN WHICH COST-BASED RATES FOR UNBUNDLED NETWORK ELEMENTS WERE ESTABLISHED). IS THAT A PROPER COMPARISON?

A. Absolutely not. While there are some surface similarities between the tasks in that proceeding and the present one, it is dangerous to read too much into those similarities. It is true that cost-based and non-discriminatory rates needed to be established for UNEs in that proceeding, just as such rates need to be established for Qwest's payphone access line services in this proceeding. However, the cost standard on which rates for UNEs were to be based is *not* the same as the one that would apply in this proceeding.

Going by Sections 251 and 252 of TA 96, the FCC had interpreted the pricing rules therein to mean that prices of all UNEs should be set equal to their respective total *element* long run incremental costs ("TELRICs"). The FCC defined TELRIC to include "... the forward-looking costs directly attributable to the specified element, as well as a reasonable allocation of forward-looking common costs."[61] It is extremely important to understand that the TELRIC methodology that had also been adopted in Commission Decision No. 60635 does *not* apply in the current proceeding for the following reasons:

[61] FCC, *In the Matter of Local Competition Provisions in the Telecommunications Act of 1996*, CC Docket No. 96-98, First Report and Order ("Local Competition Order"), released August 19, 1996, ¶ 682.

1. TELRIC pricing applies to unbundled network *elements*, not *services*. Elements are simply functionalities or network components that need to be combined in order to form telecommunications services. Those elements are of no value in and of themselves to end-users. Services, on the other hand, have value to end-users or other customers. As the FCC itself has recognized, services frequently share resources (e.g., retailing resources) and, therefore, have shared costs, whereas UNEs may have little shared costs. Therefore, the cost standard for UNEs, namely, TELRIC, is very different from the cost standard for services, namely, TSLRIC. In Commission Decision No. 60635, the Commission had established TELRICs for UNEs, *not* TSLRICs for services.
2. As I pointed out earlier, the FCC has itself specifically *ruled out* the application of pricing rules from Sections 251 and 252 of TA 96 to tariffed rates for BOC payphone services.[62] Therefore, any reasonable costing methodology that is appropriate for services (e.g., Qwest's choice of TSLRIC or some other) would be consistent with the new services test, but *not* the TELRIC methodology or the framework provided by Sections 251 and 252 of TA 96.

Therefore, it would also be wrong to apply to payphone access services anything arising out of Federal Court decisions regarding UNEs. For example, Dr. Ileo makes the claim (at 19) that subsidies should not be incorporated in BPAL rates because of the recent Federal Court decision that states "costs of universal service subsidies should not be included in the costs of providing the network elements." However, because BPAL is not an unbundled network element and payphone providers are end users, not carriers, Dr. Ileo's argument does not apply.

Q. HAS QWEST EMPLOYED THE PROPER COST STANDARD IN THIS PROCEEDING?

A. Yes. In this proceeding, rates are being determined for services, not elements. Therefore, for reasons stated above, the TELRIC cost standard is not appropriate.

[62] See footnote 11, *supra*.

Instead, Qwest's choice of the TSLRIC cost standard is appropriate because TSLRIC measures direct cost (as required by the new services test) for the two services consistently with how that cost is caused.

Q. HAS THE FCC PROVIDED GUIDELINES ON WHAT WOULD CONSTITUTE A REASONABLE OVERHEAD LOADING IN A TARIFFED RATE THAT IS SUBJECT TO THE NEW SERVICES TEST?

A. No. The FCC has not stated a precise methodology for determining a reasonable loading factor (i.e., the percent markup above direct costs). This Commission has the latitude to apply its own best judgment for determining the proper loading factor for all of Qwest's services, including payphone services. A review of the previous FCC Orders, however, indicates that the FCC is interested in efficient pricing and in granting adequate flexibility. For example, at one point the FCC decided:

> [t]o provide the flexibility needed to achieve efficient pricing, we are not mandating *uniform* loading, but BOCs will be expected to justify the loading methodology they select as well as any deviations from it.[63]

At a later time, the FCC reaffirmed this decision[64] and stated in addition:

> Dramatic rate variance alone does not establish that individual rates are unreasonable.[65]

In fact, the FCC has broadly interpreted what constitutes a reasonable loading or markup. In a more recent decision, the FCC once again stated that uniform

[63] FCC 91-186 Order, ¶ 44.

[64] FCC, *In the Matter of Open Network Architecture Tariffs of Bell Operating Companies*, CC Docket No. 92-91, Order ("FCC 93-532 Order"), released December 15, 1993, ¶ 5.

[65] *Id.*, ¶ 12.

1 loadings are not required.[66] In that same Order, the FCC approved loadings as
2 high as 4.8 times direct costs.

3 **Q. AS AN ECONOMIST, WHAT IS YOUR RECOMMENDATION TO THIS**
4 **COMMISSION ABOUT HOW IT SHOULD DETERMINE WHAT A REASONABLE**
5 **LOADING IS IN THIS CASE?**

6 A. For the purposes of this case, the Commission should be guided by economic
7 efficiency and the effect of price changes on competition. From an economic
8 perspective, welfare is maximized when demand considerations are taken into
9 account to determine a proper markup above direct costs. It is a well-established
10 economic principle that prices that are equal to their corresponding direct
11 incremental costs result in economically efficient and welfare-maximizing
12 outcomes. However, as I explained earlier in my testimony, due to considerable
13 economies of scale and scope in telecommunications,[67] pricing at direct
14 incremental cost fails to recover shared and common costs and leads the regulated
15 firm into bankruptcy. As a result, markups above direct costs are needed.

16 Markups result in higher prices than would be the case without them. As a
17 result some demand may be suppressed—a condition called *allocative inefficiency.*

[66] FCC 97-392 Order, ¶ 13.

[67] Economies of scale arise when the average incremental cost of providing a service falls as volume increases. This condition is usually associated with a situation I described earlier for capital-intensive firms: high fixed capital costs alongside low variable or incremental costs. Economies of scope arise when different services share resources. The more services share resources, the cheaper it is for a single firm to provide them together than for each service to be provided separately by different firms. LECs like Qwest display both economies of scale (because of their cost structure and the high volumes they serve) and economies of scope (because a multitude of different services are provided out of a common network where many facilities are shared in use).

1 This means that the Commission must strike a balance between the firm's
2 (Qwest's) need to remain financially solvent by recovering all its costs and users'
3 desire to get their services at the lowest possible prices (i.e., with minimum losses
4 due to allocative inefficiency). Economic theory prescribes that such a balance be
5 struck by setting markups in prices of different services in a way that minimizes
6 consumer welfare losses due to allocative inefficiency. The best known rule for
7 that purpose is Ramsey Pricing (or some variant of it) according to which the
8 markup in a service price should be inversely related to the market elasticity of
9 demand[68] for that service.[69] In this way, a relatively higher markup on those
10 services that are the least elastic in demand results in the least consumption loss
11 (and allocative inefficiency) to society while ensuring that the service provider
12 remains financially solvent. At the prices that result from the Ramsey pricing rule,
13 customers would purchase services in the same proportions as they would if all
14 prices were set equal to marginal cost.

[68] The elasticity of demand measures how sensitive customers are to changes in prices. The Law of Demand tells us that, other things being equal, price and demand move in opposite directions. However, a higher price may suppress demand a little, some, or a lot (and similarly with a lower price stimulating demand). When demand changes by *more* than the percentage change in price, then demand is called *elastic*. As the terminology suggests, the more elastic is demand, the more sensitive customers are to price changes (in either direction). When demand changes by *less* than the percentage change in price, then demand is *inelastic*. The polar case of the latter is *zero* elasticity when demand shows no sensitivity whatsoever to a price change.

[69] Ramsey pricing is named after its original proponent, economist Frank R. Ramsey. See his 1927 article, "A Contribution to the Theory of Taxation," *Economic Journal*, 37, at 47-61. Ramsey pricing has stood the test of time, particularly for application in regulated industries. There are now several more sophisticated pricing rules based on Ramsey pricing (e.g., multi-part pricing) that provide economically efficient outcomes. In fact, there are several instances of Ramsey-like pricing in the real world even in deregulated or competitive industries in which firms experience economies of scale and scope. For example, in the competitive airline industry, passengers who have the flexibility to plan weeks in advance are, in effect, contributing less to an airline's common costs (have lower markups in their prices) than business travelers who have less time to plan. Their
(continued...)

The logic of this optimal markup rule makes two things perfectly clear:

1. Because the elasticity of demand varies among services (e.g., from payphone to various non-payphone services), there is *absolutely no support* for the proposition that loadings or markups should be the same or uniform in every service provided by a LEC. As I documented earlier, the FCC has also acknowledged this important fact. (Unfortunately, Dr. Ileo [at 27-28] appears not to have when he proposes that the loading that Qwest applied for TELRIC pricing of UNEs in Commission Decision No. 60635 be applied in Qwest's tariffed rates for payphone services.)
2. In a firm the size of Qwest, the non-traffic-sensitive and shared and common costs are often the dominant component of total cost. Therefore, it should not be surprising that markups in prices directed to recover those costs could—depending on market demand conditions—end up being several multiples of the underlying direct incremental costs. "High" markups are *not*, on their face, unreasonable. Besides, markups are also subject to the market sustainability test. Markups that are unjustifiably high would also not be able to withstand competitive pressures. At any rate, in an industry in which *more* (rather than less) competition and reliance on market forces are being encouraged, it may be impossible—and ultimately, unnecessary—for a single Commission with limited informational resources to try to second-guess the market with its multitude of complex interactions. That is why the FCC, in its wisdom, refrained—on several occasions—from spelling out precise boundaries on the markup that should be applied to each and every service that LECs provide. The "invisible hand" of a dynamic marketplace can perform that task far better.

Q. SHOULD THE MARK-UP FOR PAYPHONE ACCESS LINE SERVICES BE COMPARED WITH THE MARKUP IN UNE PRICES IN ORDER TO JUDGE REASONABLENESS?

A. No. UNEs are not comparable to the payphone access line services in the sense explained above. IPPs do not compete with users of UNEs (generally, CLECs) in the provision of local exchange services. Unlike those CLECs, IPPs are generally

(...continued)

ticket prices—even for the same class of service—may differ by several hundred dollars. That is just the way efficient markets work.

not telecommunications carriers. Therefore, it is incorrect to suggest that the markup in payphone access line service prices should be comparable to that in UNE prices.

Q. DO YOU BELIEVE THAT THE MARKUPS IN QWEST'S RATES FOR BPALS AND SPALS ARE REASONABLE?

A. Yes. In light of Qwest's cost structure and the FCC's interpretation of what constitutes reasonable loadings (and, particularly, the absence of any requirements that loadings be uniform), I believe that the markups in Qwest's rates are reasonable.

Q. DO YOU CONCLUDE THAT QWEST'S RATES FOR BPAL AND SPAL SATISFY ALL STATUTORY REQUIREMENTS?

A. Yes. The statutory requirements are that payphone access line service rates be (i) cost-based, (ii) consistent with the requirements of Section 276 of TA 96, specifically with respect to the removal of subsidies to payphone service from basic exchange and exchange access services, (iii) non-discriminatory, and (iv) able to pass the new services test that applies to price cap LECs. I conclude that the rates are based on cost. Qwest has employed the proper cost standard for services, namely, TSLRIC, and demonstrated that the rate for each service at least recovers that cost (so that it cannot be anticompetitive). I conclude that the tariffed rates are not discriminatory because the services in question are available to Qwest's payphone affiliate and to competing independent IPPs on exactly the same

charges, terms, and conditions. Moreover, I have explained why "high" rates for those services are not, on their face, unreasonable or likely to favor Qwest's payphone services its competitors. Finally, I conclude that the rates pass the new services test within the parameters and guidelines provided (particularly with respect to acceptable degrees of overhead loadings or markups) by the FCC.

Q. DO YOU CONCLUDE THAT QWEST'S RATES FOR BPAL AND SPAL SERVICE ARE FAIR AND REASONABLE?

A. Yes. My analysis demonstrates that the rates for those services are not predatory or cross-subsidized, i.e., they are not anticompetitive. The loadings in those rates are also reasonable, particularly because of the parity between those rates and rates for business local exchange service. It should be kept in mind that BPAL and SPAL are *business* services and, therefore, unlike residential local exchange service, not subject to the public policy that keeps rates low, even below cost. Moreover, being services, they are not subject to the TELRIC pricing methodology employed for interconnection or UNEs (as in Docket No. U-3021-96-448, et al.).

Q. DO YOU CONCLUDE THAT QWEST'S RATES FOR BPAL AND SPAL CONFORM TO EFFICIENT PRICING PRINCIPLES?

A. Yes. As I explained in my testimony, Qwest (like other LECs) has a cost structure that is typical of capital-intensive firms: large fixed and shared and common costs in comparison to low direct incremental costs for the services they provide. Those firms experience economies of scale and scope as a result. For that reason, it is

1 vitally important that prices be set to recover not merely the incremental costs but
2 the substantial other costs as well. That, in turn, means the use of economically
3 efficient markups in service prices. Because uniform loadings or markups are not
4 economically efficient as long as the demand conditions differ across services, the
5 Ramsey pricing rule (or some variant of it) should be employed to include market-
6 determined markups in individual service prices. Because of the cost structure that
7 Qwest has, overhead loadings or markups that are several multiples of direct
8 incremental cost are not, on their face, unreasonable or inefficient.

9 **Q. WHAT IS YOUR OVERALL CONCLUSION?**

10 A. My overall conclusion is that contrary to the testimonies from the payphone
11 industry witness in this proceeding, Qwest's rates for payphone access line
12 services, BPAL and SPAL, have been constructed on the basis of sound economic
13 principles and within FCC-provided guidelines and parameters. This Commission
14 should not apply the TELRIC pricing methodology that was employed to determine
15 rates for interconnection and UNEs in Docket No. U-3021-96-448, et al. Qwest's
16 rates that are being examined in this proceeding are fair and reasonable and
17 should give no cause for alarm about either the potential for further competition in
18 Arizona's payphone market or for the prospects of long-term survival of that
19 market.

20 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

21 A. Yes.

BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF U S WEST COMMUNICATIONS, INC., A COLORADO CORPORATION, FOR A HEARING TO DETERMINE THE EARNINGS OF THE COMPANY, THE FAIR VALUE OF THE COMPANY FOR RATEMAKING PURPOSES, TO FIX A JUST AND REASONABLE RATE OF RETURN THEREON AND TO APPROVE RATE SCHEDULES DESIGNED TO DEVELOP SUCH RETURN	)	DOCKET NO. T-01051B-99-105

EXHIBITS OF

WILLIAM E. TAYLOR, Ph.D.

SENIOR VICE PRESIDENT
NATIONAL ECONOMIC RESEARCH ASSOCIATES, INC.

ON BEHALF OF

QWEST CORPORATION

August 21, 2000

n/e/r/a
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Dr. Taylor received a B.A. magna cum laude in Economics from Harvard College, an M.A. in Statistics and a Ph.D. in Economics from the University of California at Berkeley. He has taught economics, statistics, and econometrics at Cornell and the Massachusetts Institute of Technology and was a post doctoral Research Fellow at the Center for Operations Research and Econometrics at the University of Louvain, Belgium.

At NERA, Dr. Taylor is a Senior Vice President, heads the Cambridge office and is Director of the Telecommunications Practice. He has worked primarily in the field of telecommunications economics on problems of state and federal regulatory reform, competition policy, terms and conditions for competitive parity in local competition, quantitative analysis of state and federal price cap and incentive regulation proposals, and antitrust problems in telecommunications markets. He has testified on telecommunications economics before numerous state regulatory authorities, the Federal Communications Commission, the Canadian Radio-Television and Telecommunications Commission, federal and state congressional committees and courts. Recently, he was chosen by the Mexican Federal Telecommunications Commission and Telmex to arbitrate the renewal of the Telmex price cap plan in Mexico. Other recent work includes studies of the competitive effects of major mergers among telecommunications firms and analyses of vertical integration and interconnection of telecommunications networks. He has appeared as a telecommunications commentator on PBS Radio and on The News Hour with Jim Lehrer.

He has published extensively in the areas of telecommunications policy related to access and in theoretical and applied econometrics. His articles have appeared in numerous telecommunications industry publications as well as *Econometrica*, the *American Economic Review*, the International *Economic Review*, the *Journal of Econometrics*, *EconometricReviews*, the *Antitrust Law Journal*, *The Review of Industrial Organization*, and *The Encyclopedia of Statistical Sciences*. He has served as a referee for these journals (and others) and the National Science Foundation and has served as an Associate Editor of the *Journal of Econometrics*.

EDUCATION

UNIVERSITY OF CALIFORNIA, BERKELEY
Ph.D., Economics, 1974

UNIVERSITY OF CALIFORNIA, BERKELEY
M.A., Statistics, 1970

HARVARD COLLEGE
B.A., Economics, 1968
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EMPLOYMENT

NATIONAL ECONOMIC RESEARCH ASSOCIATES, INC. (NERA)
1988- Senior Vice President, Office Head, Telecommunications Practice Director. Dr. Taylor has directed many studies applying economic and statistical reasoning to regulatory, antitrust and competitive issues in telecommunications markets. In the area of environmental regulation, he has studied statistical problems associated with measuring the level and rate of change of emissions.

BELL COMMUNICATIONS RESEARCH, INC. (Bellcore)
1983-1988 Division Manager, Economic Analysis, formerly Central Services Organization, formerly American Telephone and Telegraph Company. While at Bellcore, Dr. Taylor performed theoretical and quantitative research focusing on problems raised by the implementation of access charges. His work included design and implementation of demand response forecasting for interstate access demand, quantification of potential bypass liability, design of optimal nonlinear price schedules for access charges and theoretical and quantitative analysis of price cap regulation of access charges.

BELL TELEPHONE LABORATORIES
1975-1983 Member, Technical Staff, Economics Research Center. Performed basic research on theoretical and applied econometrics, focusing on small sample theory, panel data and simultaneous equations systems.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
Fall 1977 Visiting Associate Professor, Department of Economics. Taught graduate courses in econometrics.

CENTER FOR OPERATIONS RESEARCH AND ECONOMETRICS
Université Catholique de Louvain, Belgium.
1974-1975 Research Associate. Performed post-doctoral research on finite sample econometric theory and on cost function estimation.

CORNELL UNIVERSITY

1972-1975 Assistant Professor, Department of Economics. (On leave 1974-1975.) Taught graduate and undergraduate courses on econometrics, microeconomic theory and principles.

MISCELLANEOUS

1985-1995 Associate Editor, *Journal of Econometrics*, North-Holland Publishing Company.

1990- Board of Directors, National Economic Research Associates, Inc.

1995- Board of Trustees, Treasurer, Episcopal Divinity School, Cambridge, Massachusetts.

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August, 2000

BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF U S WEST COMMUNICATIONS, INC., A COLORADO CORPORATION, FOR A HEARING TO DETERMINE THE EARNINGS OF THE COMPANY, THE FAIR VALUE OF THE COMPANY FOR RATEMAKING PURPOSES, TO FIX A JUST AND REASONABLE RATE OF RETURN THEREON, AND TO APPPROVE RATE SCHEDULES DESIGNED TO DEVELOP SUCH RETURN.	)	**DOCKET NO. T-1051B-99-105**
	)	**AFFIDAVIT OF WILLIAM E. TAYLOR**
COMMONWEALTH OF MASSACHUSETTS	)	
COUNTY OF MIDDLESEX	)	**ss**

William E. Taylor, of lawful age being first duly sworn, depose and states:

1. My name is William E. Taylor. I am Senior Vice President, National Economic Research Associates, Inc., of Cambridge, Massachusetts. I have caused to be filed written testimony and exhibits in support of Qwest in Docket No. T-1051B-99-105.

2. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct to the best of my knowledge and belief.

Further affiant sayeth not.

William E. Taylor

SUBSCRIBED AND SWORN to before me this 18 day of August, 2000.

Notary Public
Cambridge, MA

My Commission Expires: 9-24-04

BEFORE THE

ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF U S WEST COMMUNICATIONS, INC., A COLORADO CORPORATION, FOR A HEARING TO DETERMINE THE EARNINGS OF THE COMPANY FOR RATEMAKING PURPOSES, TO FIX A JUST AND REASONABLE RATE OF RETURN THEREON, AND TO APPROVE RATE SCHEDULES DESIGNED TO DEVELOP SUCH RETURN	)	DOCKET NO. T-01051B-99-105

REBUTTAL TESTIMONY OF

KERRY DENNIS WU

ON BEHALF OF

QWEST CORPORATION

AUGUST 21, 2000

REBUTTAL TESTIMONY OF KERRY DENNIS WU
INDEX OF TESTIMONY

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EXECUTIVE OVERVIEW

In Docket No. T-0105B-97-0689, the Commission determined the depreciation rates that would be used in calculating the revenue requirement in this rate proceeding. Decision Nos. 61945 and 62507 are the Commission's orders in that proceeding. Decision No. 62507 directed the Company to file depreciation rates by May 14, 2000 and the order states that it shall become effective immediately.

In their testimony, Messrs. Lee and Dunkel attempt to revisit the Commission's decision in the depreciation docket. Mr. Lee recalculates Qwest's depreciation rates because he believes that the depreciation rates should be effective with the 1/1/97 study date used in the depreciation docket. He erroneously bases his contention on a 1991 FCC order. However, the very order he relies upon provides that "...the states are not bound by effective dates or depreciation rates prescribed by the Commission [the FCC]." In this case, Decision Nos. 61945 and 62507 clearly provide that Qwest's depreciation rates will be used prospectively in Qwest's pending rate application. Mr. Lee's position is really an argument that Qwest should write-off investment equal to three years of depreciation. It is an improper invitation to engage in retroactive rate-making and should be rejected.

In contrast, Mr. Dunkel believes that Qwest's depreciation rates should be recalculated as of December 31, 1999 and that those rates should not be booked until the rates resulting from this rate proceeding become effective.

Assuming for argument's sake that he is correct, the effect would be to increase Qwest's depreciation accrual another $14.5 million above the amount contained in the Company's updated rate filing. Mr. Dunkel also recommends that a credit arrangement be established to encourage retirements of Qwest's plant and equipment. His proposal is at odds with the Commission's expressed intent to encourage investment and should be rejected.

Mr. Brosch recommends removing certain investments from Qwest's rate base because he believes the amounts represent unrecorded retirements. According to ACC Staff Schedule C-22, this would reduce annual depreciation expenses by about $2.9 million. Mr. Brosch bases his proposed adjustment on mistaken assumptions about the plant accounts in question. When those mistaken assumptions are corrected, there is no rational basis for making his proposed adjustment.

IDENTIFICATION OF WITNESS

Q. PLEASE STATE YOUR NAME, OCCUPATION, AND BUSINESS ADDRESS.

A. My name is Kerry Dennis Wu. My title is Director - Capital Recovery for Qwest Corporation (Qwest). My business address is 1600 7th Avenue, Room 3006, Seattle, Washington 98191.

Q. PLEASE GIVE A BRIEF OUTLINE OF YOUR EDUCATIONAL BACKGROUND AND TELEPHONE COMPANY EXPERIENCE.

A. I graduated from Portland State University in 1974, where I earned Bachelor of Science degrees in Business Administration and Science. In 1995, I received a Master of Business Administration from the University of Washington. In addition, I am a Certified Internal Auditor, a Certified Management Accountant and a Certified Public Accountant.

I began working for Pacific Northwest Bell (PNB) in 1974 as an internal auditor specializing in accounting and financial issues. I later managed Corporate Books and was responsible for closing the Company's books and preparation of Securities and Exchange Commission Filings. I subsequently managed Corporate Budget preparation. In the regulatory area, I supported U S WEST's rate of return advocacy by preparing

1 testimony and related materials. In 1996, I worked for a London-based
2 mobile phone company, where I was responsible for mechanizing annual
3 regulatory filings and developing tariffs. Upon returning to the States, I
4 accepted a position with AirTouch Cellular as a budget analyst. In mid-
5 1998, I was appointed the Director – Capital Recovery at U S WEST. In
6 July, 2000, U S WEST Communications, became Qwest Corporation.
7
8 **Q. HAVE YOU PREVIOUSLY TESTIFIED IN ARIZONA?**
9 A. Yes. On May 2, 2000, I filed direct testimony in this docket. And, I
10 testified on depreciation matters in the recently concluded Docket No. T-
11 0151B-97-689.
12
13 **PURPOSE OF TESTIMONY**
14
15 **Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?**
16 A. In my testimony, I respond to the arguments made by Department of
17 Defense witness Richard Lee and Staff witnesses William Dunkel and
18 Michael Brosch relating to various depreciation issues.
19
20 **EXPLANATION OF DEPRECIATION**
21
22 **Q. WHAT IS DEPRECIATION INTENDED TO ACCOMPLISH?**

A. Depreciation is the process of determining the future expense associated with capital investment. When a company invests in plant and equipment, it does so because it would like to use that plant and equipment to provide products or services to its customers in a profitable manner. One attribute of the investment as it is used is obsolescence. At some point, the plant and equipment will no longer be capable of generating profits and its economic life will have ended. If the company is to be viable, it must anticipate this obsolescence and invest in new plant and equipment <u>before</u> the old plant and equipment becomes obsolete.

From an investor's point of view, depreciation is about capital recovery. Investors commit funds to the Company with the expectation that capital will be returned as the investment is consumed. Having the appropriate level of depreciation is the mechanism through which proper capital recovery occurs. In telecommunications, this is a particularly critical issue because of the rapid technological and marketplace changes that are sweeping the industry. Full and timely recovery is also in the best interest of Qwest's Arizona customers. Customers ultimately rely on investors to invest funds to provide needed communications infrastructure. If investors are not able to achieve full and timely recovery, they will choose to invest elsewhere or to require higher returns on their invested capital. Neither option is in the best interest of customers or Qwest.

DEPARTMENT OF DEFENSE TESTIMONY

Q. CAN YOU SUMMARIZE MR. LEE'S DEPRECIATION TESTIMONY?

A. Yes. Mr. Lee states that since the Arizona Commission's May 2000 order was based on a study as of 1/1/97, depreciation rates should be effective retroactive to that date. Mr. Lee then recalculated revised depreciation rates based on the assumption that the depreciation rates had been effective beginning 1/1/97.

Q. WHAT'S WRONG WITH MR. LEE'S POSITION?

A. The primary error in Mr. Lee's position is that it is inconsistent with the Commission's depreciation orders. Prior to the Commission's recent decisions, Qwest was required to use the depreciation rates prescribed by the Commission in 1993. Decision No. 62507 prescribed new depreciation rates to be applied going forward and it was not effective until May 4, 2000. Thus, Mr. Lee is proposing a modification to Decision No. 62507 to render it effective retroactively.

Q. MR. LEE RELIES UPON A 1991 FCC MEMORANDUM AND OPINION. IS HIS RELIANCE ON THIS FCC DECISION WELL FOUNDED?

A. No. Mr. Lee has erroneously relied upon FCC Memorandum and Order 91-31. That order states that for interstate purposes, depreciation orders should be effective as of the study date. FCC Memorandum and Order 91-31 was issued in a context in which interstate depreciation decisions were normally decided within the year of the study. In this case, however, the final depreciation order did not occur until nearly three and one half years after the study date. In any event, FCC Memorandum and Order 91-31 leaves it to the states to decide when intrastate depreciation rates will become effective. The Order provides:

> Second, the states are not bound by effective dates or depreciation rates prescribed by the Commission. In Louisiana PSC, the Supreme Court ruled that the Commission could not preempt the states on depreciation for state ratemaking purposes. Thus, while the carriers must use the effective dates prescribed by the Commission for federal accounting purposes, the states may use their own discretion in determining what effective dates should be used for state ratemaking purposes and the dates used for accounting purposes would be accounted for as jurisdictional differences under Part 32.[1]

Q. WHAT IS THE IMPACT OF MR. LEE'S PROPOSAL?

A. If Decision No. 62507 is applied to the years 1997 through 1999, the Company's cost of service for those years will have been increased without any corresponding increase in rates. The effect is a massive write-off of investment and a denial of capital recovery on that investment.

In substance, Mr.Lee has proposed retroactive ratemaking and a writeoff of plant investment that the Commission has not approved. At the hearings in the depreciation docket, DOD and other parties proposed such a writeoff but their proposal was rejected by the Commission.

STAFF TESTIMONY – WILLIAM DUNKEL

Q. CAN YOU SUMMARIZE MR. DUNKEL'S RECOMMENDATIONS?

A. Mr. Dunkel has essentially two recommendations. First, Mr. Dunkel recommends that Qwest's retirements of assets be monitored and that Qwest customers be credited if retirements do not equal the depreciation expense Qwest books each year. Mr. Dunkel apparently believes that ratepayers pay for the retirement of assets. Second, Mr. Dunkel recommends a new calculation of depreciation rates to be applied to Qwest's plant and equipment.

Q. WITH RESPECT TO HIS FIRST POINT, IS MR. DUNKEL CORRECT THAT RATEPAYERS PAY TO HAVE ASSETS RETIRED?

A. Not at all. Ratepayers pay rates for the use of assets that have already placed into service. What they pay must be sufficient to cover a utility's cost of service. Part of that cost of service is the cost a utility incurs as

[1] The Prescription of Revised Percentages of Depreciation pursuant to the Communications Act of 1934, as

1 the economic value of that plant and equipment declines through use and
2 obsolescence. Depreciation is the mechanism by which a utility recovers
3 its investment. If a utility was not afforded a reasonable opportunity to
4 recover its capital investment, it would be unwilling and unable to make
5 investments necessary to provide service.
6 In his testimony, Mr. Dunkel has erroneously equated
7 modernization and retirement. These are really different concepts.
8 Modernization refers to investment in new plant and equipment and new
9 technologies. Retirement is the process by which assets are removed
10 from service. While retirement may occur simultaneously with
11 modernization, it need not. For example, when Qwest invests in a new
12 switch, it may intend that the switch will one day replace another switch
13 that continues to be used. Investment in the new switch may very well
14 precede retirement of the older switch.
15
16 **Q. IS MR. DUNKEL'S RECOMMENDATION THAT THE COMMISSION**
17 **SHOULD MONITOR RETIREMENTS JUSTIFIED?**
18 A. No. In truth, Mr. Dunkel is engaging in a backdoor attempt to revisit
19 issues decided in the recently concluded Depreciation Docket T-01051B-
20 97-0689. To achieve this end, Mr. Dunkel relies upon statements made
21 by Commissioner's Mundel and Irvin at an open meeting in which Qwest's

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amended for Alascom, Inc. , et al., Memorandum and Opinion and Order, FCC 91-31, dated January 31,

depreciation rates were considered. However, his reliance is misplaced because both Commissioners expressed their desire to see Qwest continue to make significant investments in Arizona infrastructure. Commissioner Mundel expressed his concern that "the money actually goes into infrastructure and improving technology." Commissioner Irvin stated that he looked forward to working with his fellow Commissioners to seeing that "updated equipment is put into the ground." (April 25,2000 Open Meeting, Tr., pp.46-47. 52). Neither Commissioner expressed any view about retirements.

Q. IN DOCKET T-01051B-97-0689, WHAT DID THE COMMISSION DECIDE?

A. In Decision No. 62507 Conclusions of Law, the Commission stated, "Advancements in technology, coupled with the desire to create robust competition in Arizona's telecommunications industry, warrants setting U S WEST's depreciation lives within the range of its competitors."

Q. HAS QWEST DEMONSTRATED A COMMITMENT TO INVEST IN ARIZONA?

1991, para. 25.

A. Qwest has an enviable investment track record in Arizona. Shown below is a comparison of the Arizona total depreciation expense and total net investment additions since 1991.

	Gross Adds*	Total Depreciation
1991	$257.6 million	$211.0 million
1992	$247.1	$232.5
1993	$237.7	$243.4
1994	$271.9	$262.0
1995	$312.5	$278.1
1996	$395.5	$295.7
1997	$291.5	$308.5
1998	$294.3	$302.9
1999	$406.0	$307.0

*Includes other debits and credits

As one can see, over the last nine years the Company has invested in Arizona at a rate well in excess of the rate at which it has depreciated its plant and equipment.

Q. WHAT ELSE IS WRONG WITH MR. DUNKEL'S OVER-EMPHASIS ON RETIREMENTS?

A. Mr. Dunkel's focus on retirement does not recognize the phenomena of declining usage and economic value. The American Institute of Certified Public Accountants (AICPA) define depreciation as:

> The cost of a productive facility is one of the costs of the services it renders during its useful economic [emphasis added] life.

> Generally accepted accounting principles require that this cost be spread over the expected useful life of the facility in such a way as to allocate it as equitably as possible to the periods during which services are obtained from the use of the facility. .... It is a process of allocation, not of valuation.
>
> Accounting Research Bulletin 43, Chapter 9, Section C, Paragraph 5.

Declining usage and economic value of plant and equipment suggests that an asset should be fully depreciated prior to its physical retirement.

Q. CAN YOU ILLUSTRATE DECLINING USAGE AND ECONOMIC VALUE?

A. Yes. Let's assume fiber was placed next to a working 100 pair copper cable. As customers are migrated from copper to fiber, there are fewer and fewer working pairs operating over the copper. FCC Part 32 accounting procedures do not allow partial retirements to reflect declining usage and economic value of the copper cable. Only after the last customer is removed from the copper cable that the copper is finally retired. Yet much of the copper became obsolete and had no service value well before the retirement date.

Q. SHOULD MR. DUNKEL'S RECOMMENDATION THAT RETIREMENTS BE TRACKED FOR THE PURPOSE OF ASSESSING RATEPAYER CREDITS BE ADOPTED?

A. No. Mr. Dunkel's recommendation is not sound and fails to recognize the significant investments Qwest has made, and will continue to make in the state of Arizona. In its order approving the recent merger between Qwest's parent corporation and U S WEST, Inc., the Commission imposed a significant investment requirement upon Qwest to ensure that modernization takes place. There is no need for another program to address the adequacy of modernization.

Q. MR. DUNKEL HAS PREPARED A NEW DEPRECIATION RATE CALCULATION. WOULD YOU COMMENT?

A. Yes. Mr. Dunkel recalculated 12/31/99 depreciation rates using 12/31/99 depreciation reserve levels, but he did not consistently use the appropriate 12/31/99 remaining lives. Mr. Dunkel did not composite accounts properly (e.g. buildings), consistently use FCC rounding conventions (e.g. pole lines) or use the proper Analog Switch account remaining life.

Q. IF THE DEPRECIATION RATE FORMULA WAS PROPERLY UPDATED AS OF 12/31/99, WHAT CHANGE IN DEPRECIATION ACCRUALS WOULD RESULT?

A. Updating the remaining life and the depreciation reserve properly increases the test year depreciation accrual by $14.5 million and leads to

an overall increase of $114.2 million as compared to the $99.7 million accrual increase shown in my direct testimony. See Exhibit KDW–1.

Q. MR. DUNKEL CRITICIZED MS. HUGHES REPRODUCTION COST NEW LESS DEPRECIATION (RCNLD) STUDY. WOULD YOU COMMENT?

A. Ms. Hughes completed the study following the same procedures followed in previous rate cases. We are currently examining Mr. Dunkel's suggestions to determine whether they warrant a change in this or future proceedings. We do not believe that they impact revenue requirement in this proceeding, however.

STAFF TESTIMONY – MICHAEL BROSCH

Q. PLEASE SUMMARIZE MR. BROSCH'S TESTIMONY REGARDING DEPRECIATION?

A. Mr. Brosch proposes a $55.3 million reduction in rate base to reflect either the retirement or the writeoff of investment that Mr. Brosch does not believe is still in service. According to ACC Staff Schedule C-22, the investment in question is as follows:

General Purpose Computers	$24.1 million
Digital Switching Equipment	0.4 million
Digital Circuit Equipment	0.7 million
Underground Metallic Cable	10.1 million

Buried Metallic Cable	16.8 million
Intra-Building Metallic Cable	3.2 million
Total	$55.3 million

Based on speculation that this investment is longer in service, Mr. Brosch recommends a $2.9 million reduction in depreciation expense related to this investment.

Q. MR. BROSCH RECOMMENDED DISALLOWING 1989 VINTAGE GENERAL PURPOSE COMPUTERS STATING THIS INVESTMENT CONSISTS OF MINI AND MICRO COMPUTERS THAT WERE UNLIKELY TO STILL BE IN SERVICE. WOULD YOU COMMENT?

A. Mr. Brosch's recommendation is based on a misunderstanding of the types of assets that are included in the general purpose computer account. According to FCC Part 32, paragraph 32.2124:

> (a) This account shall include the original cost of computers and peripheral devices which are designed to perform general administrative information activities.
> (b) Administrative information processing includes but is not limited to activities such as the preparation of financial, statistical, or other business analytical reports; preparation of payroll, customer bills, and cash management reports, and other records and reports not specifically designed for testing, diagnosis, maintenance or control of the telecommunications network facilities.

The general computer account consists not only of computers, but also peripheral equipment. Examples of peripherals include power equipment, printers and "dumb" terminals. Thus, one cannot conclude (as Mr. Brosch

apparently has done) that 1989 vintage equipment in this account is out of service simply because 1989 mini and micro computers with a vintage of 1989 or earlier are unlikely to be in service.

Q. WOULD YOU COMMENT ON MR. BROSCH'S DIGITAL SWITCH AND CIRCUIT RECOMMENDATIONS?

A. When older technology is retired, where possible, the remaining investment used to support the successor technology is transferred to the successor's account, but the remaining investment keeps its original vintage placement date. For example, when analog switch and electro-mechanical investment was retired, a portion of the original investment was reusable with the digital switch replacement. Examples include power equipment and furniture specifically designed for the central office. In the case of digital circuit equipment, items such as cabinets, specific furniture and power equipment would have been transferred from the analog switch account. Again, the original vintage date would have been retained.

A cursory review of the 1955 vintage digital switch investment account indicated that the 1955 vintage equipment simply had the wrong year of placement assigned.

Q. IF THE INVESTMENT VINTAGES WERE RETIRED AS STAFF SUGGESTS, WHAT WOULD HAVE BEEN THE EFFECT ON COMPANY DEPRECIATION RATES?

A. When an asset is retired, the same dollar amount is removed from gross investment and the depreciation reserve. Unless the account is fully depreciated, the resulting depreciation rate will increase.

Q. CAN YOU SHOW AN EXAMPLE THAT DEMONSTRATES THIS?

A. Yes. Let's assume the following:

Gross Investment	$100	
Depreciation Reserve	$ 50	or 50% Reserved
Remaining Life	5 years	

Under the remaining life formula, assuming no future net salvage, the depreciation rate calculation would be

$$\frac{100\% \text{ less } 50\%}{5 \text{ years}} \quad \text{equals} \quad 10\%$$

Let's assume a $10 retirement, the depreciation calculation would be as follows:

Gross Investment	$90	
Depreciation Reserve	$40	or 44.4% Reserved
Remaining Life	5.1 years	

The new depreciation rate calculation would be:

$$\frac{100\% \text{ less } 44.4\%}{5.1 \text{ years}} \quad \text{equals} \quad 10.9\%$$

As demonstrated above, one cannot arbitrarily remove vintage information without considering the effects of what would have happened had its retirement been part of Arizona's recently completed depreciation study.

Q. HAVE YOU DONE THIS CALCULATION FOR ONE OF THE ACCOUNTS IN QUESTION?

A. Yes. I assumed all 1989 and prior of the computer investment in the 1/1/97 depreciation study represented an unrecorded retirement. I then hypothetically "retired" that investment and recalculated the new depreciation rate. Shown below are the original and "revised" depreciation rates for general purpose computers:

	Original Study	"Revised"
Depreciation Reserve	72.4%	59.0%
Remaining Life (Years)	2.4	2.8
Depreciation Rate	9.4%	12.9%

If implemented and incorporated into the study, Mr. Brosch's recommendation would increase the computer depreciation study rate and accrual primarily because the depreciation reserve would decrease from 72.4% to 59.0%.

Q. MR. BROSCH RECOMMENDS REMOVAL OF COPPER INVESTMENT BECAUSE HE BELIEVED METALLIC CABLE WITH A 1925 VINTAGE DATE WAS UNLIKELY TO EXIST. WOULD YOU COMMENT?

A. I take exception to Mr. Brosch's arbitrary treatment. As we explained to Mr. Brosch, the accounting system assigns a year of placement of 1901 when the asset's actual vintage year is not identified. This could be plant placed in 1985 or 1999. Then, when the capital recovery system receives vintage information from the accounting system, it defaults all 1901 – 1925 vintage years to 1925. Simply having a year placed of 1925 does not mean the plant does not exist or that it was placed 75 years ago. It simply means the asset did not have its actual year of placement identified.

Q. SHOULD THE COMMISSION ACCEPT MR. BROSCH'S PROPOSED $55.3 MILLION RATE BASE ADJUSTMENT AND THE CORRESPONDING REDUCTION IN DEPRECIATION EXPENSE?

A. No. The proposed adjustment is not appropriate and should be rejected.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

BEFORE THE

ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF U S WEST COMMUNICATIONS, INC., A COLORADO CORPORATION, FOR A HEARING TO DETERMINE THE EARNINGS OF THE COMPANY FOR RATEMAKING PURPOSES, TO FIX A JUST AND REASONABLE RATE OF RETURN THEREON, AND TO APPROVE RATE SCHEDULES DESIGNED TO DEVELOP SUCH RETURN	)	DOCKET NO. T-01051B-99-105

EXHIBITS OF

KERRY DENNIS WU

ON BEHALF OF

QWEST CORPORATION

AUGUST 21, 2000

Change in Annual Depreciation Accruals Resulting from Changes in Depreciation Rates
Intrastate Factors Applied ($000)

Account Number and Class or Subclass of Plant	Intrastate Investment 12/31/99 A	1/1/97 Study Depreciation Rates B	Rate Amount C = A * B	12/31/99 Study Depreciation Rates D	Rate Amount E = A * D	Change in Depreciation Accrual E - C
2112 MOTOR VEHICLES	47,502	4.9%	2,328	2.7%	1,283	(1,045)
2114 SPEC PURPOSE VEHICLES	18	10.2%	2	13.4%	2	-
2115 GARAGE WORK EQUIP	961	15.6%	150	18.1%	174	24
2116 OTHER WORK EQUIP	15,891	15.9%	2,527	13.8%	2,193	(334)
2121 BUILDINGS	115,383	3.0%	3,461	2.9%	3,346	(115)
2122 FURNITURE	1,208	20.1%	243	21.2%	256	13
2123.1 OFFICE EQUIPMENT	3,883	22.3%	866	19.2%	746	(120)
2123.2 COMPANY COMM EQUIPMENT	1,040	6.1%	63	0.0%	-	(63)
2124 GEN PURPOSE CMPTR	79,409	9.4%	7,464	4.5%	3,573	(3,891)
2211 ANALOG SW EQUIP	110,824	16.2%	17,953	57.0%	63,170	45,217
2212 DIGITAL SW EQUIP	655,053	11.0%	72,056	10.7%	70,091	(1,965)
2220 OPERATOR SYSTEMS	6,498	1.6%	104	7.4%	481	377
2231 RADIO SYSTEMS	23,571	5.8%	1,367	3.3%	778	(589)
2232 CIRCUIT DDS	5,667	5.4%	306	0.0%	-	(306)
2232 CIRCUIT DIGITAL	752,751	9.8%	73,770	8.9%	66,995	(6,775)
2232 CIRCUIT ANALOG	32,631	3.2%	1,044	1.5%	489	(555)
2362 OTHER TERM EQUIP	40,092	7.5%	3,007	7.1%	2,847	(160)
2351 PUB TEL TERM EQUIP	17,969	0.0%	-	3.2%	575	575
2411 POLE LINES	34,403	6.4%	2,202	6.4%	2,202	-
2421 AERIAL CABLE MET	121,417	12.6%	15,299	9.6%	11,656	(3,643)
2421 AERIAL CABLE NON MET	4,563	8.7%	397	9.3%	424	27
2422 UNDGRD CABLE MET	257,054	9.5%	24,420	7.8%	20,050	(4,370)
2422 UNDGRD CABLE NON MET	64,194	10.3%	6,612	11.2%	7,190	578
2423 BURIED CABLE MET	927,241	12.0%	111,269	11.1%	102,924	(8,345)
2423 BURIED CABLE NON MET	12,727	6.4%	815	6.7%	853	38
2424 SUB CABLE MET	2	86.1%	2	192.0%	4	2
2424 SUB CABLE NON MET	-	0.0%	-	0.0%	-	-
2426 INTRA BLDG CABLE MET	30,275	3.5%	1,060	3.2%	969	(91)
2426 INTRA BLDG CABLE NON MET	429	13.1%	56	9.5%	41	(15)
2431 AERIAL WIRE	6,494	20.6%	1,338	17.4%	1,130	(208)
2441 CONDUIT SYSTEMS	225,140	2.2%	4,953	2.3%	5,178	225
Total	3,594,290		355,134		369,620	14,486
Composite Rates			9.9%		10.3%	

BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF U S WEST COMMUNICATIONS, INC., A COLORADO CORPORATION, FOR A HEARING TO DETERMINE THE EARNINGS OF THE COMPANY, THE FAIR VALUE OF THE COMPANY FOR RATEMAKING PURPOSES, TO FIX A JUST AND REASONABLE RATE OF RETURN THEREON, AND TO APPPROVE RATE SCHEDULES DESIGNED TO DEVELOP SUCH RETURN.	)	**DOCKET NO. T-1051B-99-105** **AFFIDAVIT OF KERRY DENNIS WU**
STATE OF WASHINGTON	) :	**ss**
COUNTY OF KING	)	

Kerry Dennis Wu, of lawful age being first duly sworn, depose and states:

1. My name is Kerry Dennis Wu. I am Director – Capital Recovery of Qwest Corporation in Seattle, Washington. I have caused to be filed written testimony and exhibits in support of Qwest in Docket No. T-01051B-99-0105.

2. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct to the best of my knowledge and belief.

Further affiant sayeth not.

Kerry Dennis Wu

Kerry Dennis Wu

SUBSCRIBED AND SWORN to before me this 17th day of August, 2000.

ANGIE LEIFER
COMMISSION EXPIRES
NOTARY PUBLIC
8-08-02
STATE OF WASHINGTON

Angie Leifer

Notary Public residing at
Seattle, Washington.

My Commission Expires: 8/8/02

BEFORE THE

ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF U S WEST COMMUNICATIONS, INC. A COLORADO CORPORATION, FOR A HEARING TO DETERMINE THE EARNINGS OF THE COMPANY FOR RATEMAKING PURPOSES, TO FIX A JUST AND REASONABLE RATE OF RETURN THEREON AND TO APPROVE RATE SCHEDULES	)	DOCKET NO. T-01051B-99-0105

REBUTTAL TESTIMONY OF

PHILIP E. GRATE

QWEST CORPORATION

August 21, 2000

REBUTTAL TESTIMONY OF PHILIP E. GRATE

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INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Philip E. Grate. My business address is 1600 Bell Plaza, Room 3008, Seattle, Washington 98024.

Q. U S WEST HAS UNDERGONE A NAME CHANGE. HOW WILL YOU REFER TO THE FORMER U S WEST IN YOUR REBUTTAL TESTIMONY?

A. The regulated telecommunications subsidiary of Qwest Communications International, Inc. (formerly U S WEST, Inc.) is now Qwest Corporation. Qwest Corporation is the new name of the former U S WEST Communication, Inc. In my testimony I will refer to the former U S WEST Communications, Inc. as "Qwest" or the "Company."

Q. WHAT IS YOUR POSITION WITH QWEST AND WHAT ARE YOUR RESPONSIBILITIES?

A. I am a State Finance Director. In this capacity I serve as an expert witness for the Company concerning regulatory finance and accounting matters.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL, PROFESSIONAL, AND BUSINESS EXPERIENCE.

1 A. I earned a Bachelor of Science in Business Administration degree with a
2 concentration in accounting and a Juris Doctorate, both from Indiana
3 University. I have held licenses as a Certified Public Accountant and a
4 lawyer since 1983. I began my professional career as a senior tax
5 consultant in a national public accounting firm. In 1984 I began my
6 employment with Qwest and one of its predecessors, Pacific Northwest
7 Bell Telephone Company, where I have held various positions in tax,
8 accounting, and regulatory finance as described more fully in my
9 curriculum vita which is Exhibit PG-1 to this testimony. My vita also
10 identifies my testimony before state regulatory commissions in several
11 jurisdictions.

12

13 **Q. HAVE YOU EVER TESTIFIED BEFORE THE ARIZONA CORPORATION**
14 **COMMISSION?**

15 A. Yes. I have testified in Arizona Corporation Commission Docket No. T-
16 01051B-99-0497 regarding the merger of U S WEST, Inc. and Qwest
17 Communications International Inc. and in Docket No. T-01051B-99-0737
18 regarding the sale of Qwest exchanges to Citizens Rural.

19

20 **PURPOSE**

21 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

A. The purpose of my testimony is to rebut the pre-filed testimony of Arizona Residential Utilities Consumer Office (RUCO) witness Hugh Larkin, Jr. and Arizona Corporation Commission Staff (Staff) witness Steven C. Carver concerning their proposals to disallow incentive compensation costs from Qwest's 1999 test year. My testimony also rebuts the testimony of Mr. Carver and RUCO witness Ralph C. Smith to remove Pension Asset from Qwest's ratebase.

INCENTIVE COMPENSATION

Q. WHAT HAVE STAFF AND RUCO PROPOSED REGARDING QWEST'S INCENTIVE COMPENSATION COSTS?

A. The following chart indicates Staff's and RUCO's proposed disallowances of QWEST's incentive compensation expenses for four incentive compensation plans.

Incentive Compensation Plan	Staff's proposed disallowance	RUCO's proposed disallowance
Short Term Incentive Plan for officers (STIP)	100%	50%
Annual Bonus Plan for managers (APB)	100%	50%
IT-Career Structure Bonus Plan for Information Technology employees (ITCSBP)	100%	50%

Long Term Incentive Plan for officers (LTIP)	100%	100%

Q. PLEASE DESCRIBE THESE FOUR PLANS.

A. In general, the plans are as follows:

Short Term Incentive Plan (STIP). The STIP is for the Company's Officers. The 1999 STIP provides annual cash bonus payouts based on objective Company performance measures set in the first quarter of each year and approved by the Board of Directors. An executive's target opportunity is set forth each year using market data, and is communicated as a percentage of salary. An executive can be paid above or below his/her target opportunity.

Annual Bonus Plan (ABP). The ABP covers managers below the Officer level. Objective Company performance measures are set in the first quarter of each year. An employee's target opportunity is set each year, and communicated as a percentage of salary. An employee can be paid above or below his/her target opportunity. The Board of Directors approves the corporate component of the bonuses, which, as detailed below, utilizes the same measures as an executive's STIP.

IT-Career Structure Bonus Plan (ITCSBP). The ITCSBP is for employees participating in the Information Technologies Career Structure which is a technical career progression for Information Technologies (IT) personnel. The purpose of the program is to improve the overall performance of the IT organization and to reward individuals for their specific contributions to this improvement and success.

Long Term Incentive Plan (LTIP). Both officers and managers were eligible for the LTIP. The LTIP has been replaced with a plan that relies exclusively on stock options, which generate no operating expense.

Q. WHAT WERE THE STIP AND APB PERFORMANCE CRITERIA IN EFFECT DURING THE TEST PERIOD?

A. During the test period, the following performance criteria were in effect:

	STIP	ABP
Net Income	20%	12%
Net Cash Flow	20%	12%
Total Revenue	20%	12%
Customer Value Analysis (CVA)		
Consumer CVA	10%	6%
Small Business Group CVA	10%	6%
Bus. & Gov't Services CVA	10%	6%
Wholesale Service Quality Measures	10%	6%
Individual Business Unit Results		40%
Total	100%	100%

Q. DO YOU OPPOSE ADJUSTING LTIP EXPENSES OUT OF THE TEST YEAR?

A. No. The 1997 Long Term Incentive Plan (LTIP) expired at the end of 1999 and paid out in 2000. The 1998 LTIP will expire at the end of 2000 and pay out in 2001. The company recorded expenses for the third and fourth quarters of 2000 in June and July of 2000. The LTIP has been replaced with a plan that relies exclusively on stock options, which generate no operating expense. Consequently, the Company expects to bear no expenses for LTIP after 2000. Accordingly, I do not oppose the removal of this expense.

Q. DO YOU OPPOSE STAFF'S AND RUCO'S PROPOSED DISALLOWANCE OF STIP, ABP AND ITCSBP EXPENSES?

A. Yes. To the extent costs are necessary and prudently incurred in the conduct of the utility's business and reasonable in amount, they should

not be disallowed.[1] Neither Staff nor RUCO have shown these incentive compensation plans to be unnecessary or imprudent. Nor have they asserted that the amount of compensation Qwest pays its employees is unreasonable in amount. Instead, they offer various arguments that are founded not on sound ratemaking principles but, instead, (in RUCO's case) on a very coarsely applied benefits argument and (in Staff's case) an undefined standard that would relieve ratepayers from paying the full cost of providing service to the extent the Staff does not approve of the specific components of or the "focus" of a utility's incentive compensation plan.

The only benefit ratepayers get from a regulated utility is service. Their only obligation to it is to pay regulated rates for the services they receive. Under cost of service regulation, ratepayers are protected from whatever market power utilities possess by the setting of rates based on cost and no more; utilities are protected from confiscation by the setting of rates based on cost and no less. These costs include operating expenses and a reasonable allowance of a return on invested capital. Costs are to be ascertained, not created, by regulation; otherwise the allowance of a return becomes a farce.

[1] "One standard of reasonable rates can fairly be said to outrank all others in importance attached to it by experts and public opinion alike—the standard of costs of service, often qualified by the stipulation that the relevant cost is necessary, true (i.e., private and social) cost or reasonably or prudently incurred." Principles of Public Utility Rates, Bonbright, Danielsen and Kamerschen, Public Utility Reports, Inc. (1988), p. 109

If the cost of all other forms of compensation of an employee are allowed recovery for ratemaking purposes, nothing justifies disallowing the cost of the incentive compensation of that employee because the work the employee does cannot be divided between work for incentive pay and work for all other forms of compensation. For example, I do not work one hour for my base pay, a different hour for vacation pay, another hour for my dependent health care benefits and another hour for my incentive compensation. Instead, I do all my work knowing that my performance and the performance of my peers will determine, in part, how much I am paid. The work I do to earn that incentive pay is no different from the work I do to earn my base pay and other benefits. Staff and RUCO attempt to create a completely artificial distinction between employees' work for incentive compensation and their work for base pay and benefits. However, they cannot isolate the portion of the work employees perform that is for incentive pay.

Consequently, by proposing to disallow some of the prudently incurred costs Qwest incurs to pay its employees, Staff and RUCO are proposing that ratepayers get something (the service that requires all the work employees perform) for nothing. As I will explain, their arguments for excluding costs are rationalizations that are not based on sound ratemaking policy or, in many cases, sound reasoning.

1 **Financial Performance Incentives**

2 **Q. QWEST'S INCENTIVE COMPENSATION PLANS SET OBJECTIVES**
3 **FOR NET INCOME, REVENUE AND CASH FLOW. CAN YOU**
4 **DEMONSTRATE THAT THESE CRITERIA BENEFIT RATEPAYERS?**

5 A. Yes. In summary, the benefit can be shown as follows:

6 • Incentive compensation is used to motivate employees to, among other
7 things, improve financial performance and accomplish strategic
8 objectives.

9 • Employees cause improvements in financial performance by improving
10 efficiency. They improve efficiency by innovating to cut costs and improve
11 productivity. This improved productivity is embedded in the test year
12 expenses.

13 • Improvement in financial performance is the yardstick that measures the
14 tangible results of reduced costs and increased productivity. If financial
15 performance does not improve, then the results have not been achieved.
16 The calculus of the benefit is straightforward. If costs decrease, earnings
17 increase. If cash is spent more wisely, cash flow improves. So financial
18 improvement is the inevitable result of productivity, cost reduction and
19 cash preservation improvements.

20 • The shareholder of a cost-of-service-regulated business only gets the
21 benefit of the financial improvement temporarily--during the period of

regulatory lag. Regulatory lag is the period between the time the benefit appears in results of operations and the time it becomes rate effecting, which is the period of one to two years that is required to conduct a rate proceeding (if one is required). When the financial improvement occurs, it becomes part of an historical test period and reduces revenue requirement derived from that test period. So the productivity improvements inure to the benefit of ratepayers in the form of higher test year earnings that lower revenue requirement and, thereby support lower rates for services. In the next series of questions, I provide an illustration that demonstrates mathematically the process by which the benefit of improved financial performance inures to ratepayers.

- Similarly, cash flow improvements benefit ratepayers by lowering the cost of capital because investors base the price they require for their capital on the cash flows of the enterprise.

Q. PLEASE DESCRIBE THE FOUNDATION OF YOUR ILLUSTRATION.

A. Suppose that in Arizona there are two utilities—Utility #1 and Utility #2—that are identical except for certain exceptions I will mention. To make the example easy to follow, assume both utilities sell only one service. Also assume that the Commission has set their rates based on an allowed return on equity of 10%.

Assume that during 1998 each utility sold $10 of service. Each also had $6 of direct expenses and $3 of indirect expenses in 1998. As the following schedule shows, their direct margin was $4 and their net income was $1.

Year	--1998--	--1998--
Utility	#1	#2
Revenues	$10.00	$10.00
Direct expenses	6.00	6.00
Direct margin	4.00	4.00
Indirect expenses	3.00	3.00
Net income	$1.00	$1.00

Q. PLEASE CONTINUE WITH YOUR ILLUSTRATION.

A. Assume that the net rate base of both utilities in Arizona was $10 in 1998 and, to make things simple, that the utilities are financed 100% with equity. As the following schedule shows, the 1998 return on equity is 10%.

Year	--1998--	--1998--
Utility	#1	#2
Net income	$1.00	$1.00
Equity	$10.00	$10.00
Return on equity	10%	10%

Q. PLEASE CONTINUE.

A. Suppose that Utility #1 adopts an incentive compensation program for 1999 that makes increases in employee compensation dependent upon increased net income and Utility #2, instead, gives its employees an increase in base salary. Further, assume that Utility #1 and Utility #2 end up paying exactly the same level of compensation. The only difference is that the employees of Utility #1 got their full compensation because they met net income goals and the employees of Utility #2 got their full compensation in base pay. Finally, assume that because of Utility #1's incentive compensation program employees were able to reduce indirect expenses by 50 cents so that total expenses in 1999 are $8.50 for Utility #1 and $9.00 for Utility #2. As the following schedule shows, net income would be $1.50 for Utility #1 and $1.00 for Utility #2. Return on equity would be 15% for Utility #1 and 10% for Utility #2.

Year	--1999--	--1999--
Utility	#1	#2
Revenues	$10.00	$10.00
Direct expenses	6.00	6.00
Direct margin	4.00	4.00
Indirect expenses	2.50	3.00
Net income	$1.50	$1.00
Equity	$10.00	$10.00
Return on equity	15%	10%

Q. PLEASE CONTINUE.

A. Assume that a show cause is brought against Utility #1 in 2000 because of its 15% Return on Equity in 1999. Suppose that the Commission finds that the appropriate ROE for the utility is 10%. Based on these facts, the Commission would reduce Utility #1's rates by 50 cents to reduce its earnings from $1.50 per year to $1.00 per year and its return on equity from 15% to 10%. The following schedule shows net income and return on equity before the rate decrease and after the rate decrease.

	Before	After
Utility	#1	#1
Revenues	$10.00	$9.50
Direct expenses	6.00	6.00
Direct margin	4.00	3.50
Indirect expenses	2.50	2.50
Net income	$1.50	$1.00
Equity	$10.00	$10.00
Return on equity	15%	10%

So Utility #1's rates would be $9.50 instead of $10.00 after the order in the show cause.

Q. PLEASE CONTINUE.

A. Let's assume that new rates from the order in the 2000 show cause went into effect on January 1, 2001. We said that Utility #1 achieved a 15% return on equity in 1999 instead of its allowed 10%. The following has happened.

- The shareholders of Utility #1 got to keep the benefit of the return on equity in excess of 10% during 1999 and 2000.
- However, the ratepayers of both utilities paid the identical $10 in rates in 1999 and 2000.
- And, the ratepayers of Utility #1 enjoy the benefit of 50 cent lower rates in 2001 and thereafter.

So, assuming all other things are equal, the ratepayers of Utility #1 were no worse off than the ratepayers of the non-incentive-compensation Utility #2 in 1999 and 2000 and were better off than Utility #2 ratepayers by 50 cents in 2001 and succeeding years. It follows that the incentive compensation plan, which motivates employees to achieve higher net income (and, therefore, a higher ROE for shareholders) also produces benefits for ratepayers through lower revenue requirements.

Q. WHAT IF THERE IS NO RATE CASE OR THERE IS A RATE CASE BUT RATES DO NOT DECREASE? DO RATEPAYERS DERIVE THE BENEFIT OF THE IMPROVED FINANCIAL PERFORMANCE UNDER THESE CIRCUMSTANCES?

A Yes. Under cost of service regulation, ratepayers always benefit from decreases in costs reflected in regulated results of operations. The most obvious instance of ratepayer benefit is when improved financial

performance is reflected in a test year that is used in a rate case that results in rate decreases. It's less obvious but just as true that ratepayers benefit from a cost decrease even if the rate case results in rate increases. Ratepayers also benefit when a cost decrease has a dampening effect on revenue requirement that can discourage a utility from filing a rate case or encourage the filing of a motion to show cause. Regardless of whether a rate action occurs and regardless of its outcome, improved financial performance has a lessening effect on revenue requirement that, in turn, lessens the rates a utility needs for full recovery of its costs.

Q. STAFF ARGUES THAT RATEPAYERS DO NOT BENEFIT FROM INCENTIVE COMPENSATION COST REDUCTIONS (AND BY EXTENSION OF STAFF'S ARGUMENT, INCREASES IN FINANCIAL PERFORMANCE) IN THE ABSENCE OF A RATE PROCEEDING. [CARVER, P. 55, LINES 7—10]. DO YOU AGREE?

A. No. Ratepayers always benefit from an incremental financial improvement, including a cost reduction, regardless of whether or not there is a rate proceeding. An incremental financial improvement incrementally reduces revenue requirement. Whether a rate proceeding is required to adjust rates depends on the total revenue requirement which is the sum of all incremental revenue, expense and rate base

changes. But the fact that a rate proceeding is or is not required does not diminish in any way an incremental change in revenue requirement, such as an improvement in revenues, a decrease in costs or a change in rate base.

Q. STAFF ARGUES THAT SHAREHOLDERS, NOT RATEPAYERS, SHOULD BEAR THE COST OF INCENTIVE COMPENSATION BECAUSE "SHAREHOLDERS BENEFIT THROUGH INCREASED PROFIT, REVENUE AND CASH FLOW RESULTING FROM EMPLOYEES IMPROVING THEIR PERFORMANCE IN PURSUIT OF INCENTIVE COMPENSATION." [CARVER, P. 52, LINES 19--21] WHAT IS YOUR RESPONSE?

A. Mr. Carver's observation is as true as it is incomplete. Shareholders undeniably benefit from improved financial performance caused by employees' pursuit of incentive compensation. However, Mr. Carver fails to take his analysis the next step. He disregards the fact that if shareholders benefit from improved financial results, ratepayers do too. My illustration above shows how this process works. Utility #1's 1999 test year results in my illustration are better because of the improvement in financial performance brought about by incentive compensation. In my illustration, this improvement justifies lowering rates 50 cents, regardless of the effect of other factors.

It is also a very important point, and one Mr. Carver chooses to ignore, that unless shareholders experience the benefit of improved financial performance first, there can be no benefit available to ratepayers; the benefit must first be realized in financial performance—so that it can be known and measurable—before it can properly be reflected in reduced revenue requirement.

The other key point is that shareholders get to enjoy the benefit of incentive compensation only temporarily, during the period of regulatory lag. As my illustration demonstrates, the inclusion of cost savings in a test year captures the benefit for ratepayers who, after the period of regulatory lag, get to enjoy the benefit in subsequent years. So ratepayers and shareholders effectively share the benefit.

Q. RUCO ARGUES THAT BECAUSE RATEPAYERS AND SHAREHOLDERS SHARE THE BENEFIT, RATES SHOULD ONLY INCLUDE 50% OF THE TEST YEAR STIP AND APB EXPENSES. [LARKIN, P. 18, LINES 18—19] WHAT IS YOUR RESPONSE?

A. RUCO argues the Commission should disallow 50% of the STIP and ABP because shareholders will benefit from the improved financial performance that the STIP and ABP are aimed at achieving. Improving financial performance is not automatic; it requires improving business efficiency. If RUCO's rationale were consistently applied in rate making,

then 50% of any cost aimed at fostering or improving business efficiency would have to be disallowed on the basis that shareholders would derive some benefit (albeit temporarily) by incurring that cost. The peril of universally applying this rationale is obvious—it would strongly discourage utilities from incurring costs to improve business efficiency and financial performance (to the benefit of shareholders and ratepayers). RUCO's rationale is not a sound rate making policy and it should not be universally applied. Nor should it be applied to this particular cost as a rationalization to deny recovery.

Q. DOESN'T REGULATORY LAG DEPRIVE RATEPAYERS OF THE BENEFIT OF IMPROVED FINANCIAL PERFORMANCE?

A. No. Regulatory lag is the period of time between the occurrence of an event that affects financial performance and the realization and incorporation of that financial performance into the ratemaking process. Regulatory lag is a regulatory fact of life where historical test years are employed. As such, it does not discriminate against or in favor of ratepayers or shareholders. Instead, it treats them both the same; it uniformly imposes a delay (not a deprivation) in the realization of changes (whether increases or decreases) in financial performance and cost of capital.

1 **Q. STAFF ARGUES THAT "SHAREHOLDERS SHOULD BE 'AT RISK' OR**
2 **RESPONSIBLE FOR THE POTENTIAL INCENTIVE COMPENSATION"**
3 **BECAUSE "SHAREHOLDERS BENEFIT...." [CARVER, P. 52, LINES 20**
4 **THROUGH 22. HOW DO YOU RESPOND?**

5 A. Again, Mr. Carver's analysis fails to go far enough. He argues that if
6 incentive compensation costs are included in the calculation of rates and
7 employees receive no incentive pay or less incentive pay than the amount
8 included in rates, ratepayers would nevertheless be required to fund the
9 allowed level of incentive plan costs. He argues that if Qwest pays less
10 than the full cost, Qwest's profits increase by the difference. [Carver, p.
11 52. Lines 5—12]. The fallacy of Mr. Carver's argument is that it ignores
12 the effect he describes on Qwest's overall profits and financial
13 performance when employees do not achieve financial targets.

14 As one would expect, employers (including Qwest) employ incentive
15 compensation plans to improve profitability by designing them so that
16 employees receive a portion of, but less than all of, the benefits of
17 improved financial performance they achieve. Consequently, as incentive
18 payouts for financial performance increase, so does the employer's
19 overall financial performance. Conversely, the lower the payouts are, the
20 lower the employer's overall financial performance is.

21 Because the Company's overall financial result is lower when payouts on
22 financial performance are lower, investors are already "at risk" and

"responsible for" incentive compensation. Qwest investors are at risk because there is a direct and positive correlation between the level of payouts and the level of Qwest's overall net income.

Q. STAFF ARGUES "THE RATEMAKING RECOGNITION OF INCENTIVE COMPENSATION VIRTUALLY ELIMINATES COMPANY RISK OF LOSS FOR AMOUNTS INCLUDED IN REVENUE REQUIREMENT, AT RATEPAYER EXPENSE." [CARVER, P. 51, LINES 18—20] DO YOU AGREE?

A. No. This argument 1) is a red herring and 2) fails because Mr. Carver's analysis does not go far enough. The argument is a red herring because the words "incentive compensation" could be replaced with any other item of cost recognized in revenue requirement and the statement would be equally applicable. Any cost included in revenue requirement could be (albeit inaccurately) described as "risk free" because, and to the extent, rates are designed to recover it. However, no cost (including incentive compensation) included in a revenue requirement is truly risk free. The inclusion of costs in revenue requirement is not a guarantee of recovery. As Mr. Carver testifies, "Whenever a rate case is filed by a utility, it assumes a risk that the rates filed and ultimately approved will either be inadequate or excessive, no matter what test year approach or series of adjustments are proposed by the parties." [Carver, p. 132, lines 9—11]

Revenues realized may be more or less than rates were designed to provide and expenses may be more or less than the amount included in the test year. This is a basic fact of cost-of-service rate making and renders Mr. Carver's statement that inclusion in revenue requirement virtually eliminates risk of loss, at best, irrelevant, if not misleading.

Mr. Carver's argument fails to go far enough because it ignores that employees, shareholders and ratepayers all share a unity of interest and, therefore, risk in the outcome of financial performance. When financial performance improves, employees benefit from higher payouts, shareholders benefit from higher overall financial performance and ratepayers benefit from lower revenue requirement. Conversely, lower payouts result from lower overall financial performance, which yields higher revenue requirement. Therefore, incentive compensation is not a risk free proposition for anyone. Ratepayers', shareholders' and employees' financial interests all rise and fall on the same financial performance tide. However, the point and purpose of financial performance incentive compensation is to motivate employees to achieve higher levels of financial performance than they would be motivated to achieve absent the incentive. When employees respond to that motivation and succeed in achieving better financial performance, employees, shareholders and ratepayers all prosper together.

Service Quality Incentives

Q. DO THE TEST YEAR STIP AND ABP INCLUDE PERFORMANCE CRITERIA BASED ON SERVICE QUALITY?

A. Yes. Both contain performance criteria for a Customer Value Analysis (CVA) for Consumer, Small Business Group and Business and Government Services. These three CVAs constituted 30% of the STIP performance criteria. The ABP is based 40% on business unit components and 60% on a corporate component that uses the same criteria as the STIP. So the three CVAs make up 30% multiplied by 60%, or 18%, of the ABP.

Both the STIP and ABP also contain two Wholesale Service Quality Measures. One was for provisioning and was weighted at 5% of the STIP and 3% (5% multiplied by 60%) of the ABP. The other was for repair and was weighted at 5% and 3% respectively of the STIP and ABP.

Q. DOES STAFF RECOMMEND DISALLOWANCE OF THE COST OF THE PORTION OF THE ABP AND STIP THAT IS BASED ON THESE SERVICE QUALITY COMPONENTS?

A. Yes. Staff recommends disallowance of the service quality components of the STIP and APB for four reasons. First, Staff complains that the CVA measures customers' perceptions of service quality instead of directly

measuring the timeliness or adequacy of service installations, changes, repairs and overall quality of the specific service provided by Qwest. Second, Staff observes that the 1999 STIP and ABP did not pay out on three of the five service quality measures. Third, Staff asserts that the STIP and ABP are too heavily weighted towards financial measures [Carver, p. 46, line 14 through p. 48, line 11]. Fourth, Staff observes that the service quality components are based on total Company results and do not focus on assessments of service quality in Arizona. [Carver, p. 47, lines 19-22]

Q. DO ANY OF STAFF'S REASONS JUSTIFY DISALLOWANCE OF THE PORTION OF THE ABP AND STIP THAT IS BASED ON THESE SERVICE QUALITY COMPONENTS?

A. No. Qwest adopted the CVA as a measure of service quality because the Company believes it directly measures customer satisfaction. Mr. Carver apparently believes that as measures of service quality, surveys are inferior to direct measures. Placing his own judgement about the best way to measure service quality above the judgement of Qwest's management, Mr. Carver concludes that management's use of surveys instead of direct measures justifies disallowance. While Mr. Carver may prefer direct measures of service quality, he has not shown why his own judgement should be substituted for the judgement of Qwest's

1 management in deciding how to measure service quality for purposes of
2 paying incentive compensation. Nor has he offered substantial reasons
3 that would demonstrate that service quality surveys are defective as
4 measures of service quality such that they justify a disallowance. Staff
5 has not suggested the CVA is harmful to ratepayers' interests. Mr.
6 Carver's apparent preference for a different measure of service quality is
7 not sufficient reason to justify disallowing the cost of incentive
8 compensation based on the CVA.

9 Instead of complaining that the 1999 STIP and ABP did not pay out on
10 three of the five service quality measures, Staff should approve of the
11 discipline with which Qwest executed its incentive compensation plans.
12 The total cost of incentive compensation in the test year is substantially
13 less than it would have been had all service quality targets been met.
14 This lower level of cost shows that Qwest's incentive compensation plans
15 have teeth. Instead of being grounds to disallow the service quality
16 components, this test year cost savings resulting from rigorous application
17 of the standards in the plans should be grounds for applauding the high
18 standards of service quality the Qwest's plans have set and enforced.

19 Mr. Carver's argument that the service quality component of the STIP and
20 ABP should be disallowed because the plans are too heavily weighted
21 towards financial criteria makes no sense. First, Mr. Carver offered no
22 reason why the plans' service quality components should be considered

1 poisoned by the financial components. Further, in an attempt to support
2 his position, Mr. Carver measures the weighting of the payout instead of
3 the weighting of the plans. Because Qwest conscientiously enforced the
4 service quality standards in the plans they paid out relatively little for
5 service quality. Consequently, the 1999 plan payouts are weighted more
6 heavily towards financials than are the base line criteria in the plans
7 themselves. Inexplicably, Mr. Carver would have the Commission
8 disallow the service quality components of the STIP and ABP because
9 Qwest applied them with rigor, and the result is a relatively low payout for
10 service quality in the test year.

11 Finally, Mr. Carver observes but fails to acknowledge the significance of
12 the fact that company wide measures of service quality performance
13 include Arizona among the 14 states measured. The weighting of the
14 service quality results reflects the size of Arizona's operations in
15 proportion to the size of the Company's 14 state operations. Likewise, the
16 cost of these plans charged to Arizona operations reflects only the cost of
17 Arizona operations, not the cost of the Company's total 14-state
18 operation. Mr. Carver may prefer that the Company operate 14 separate
19 incentive compensation plans, but his preference is hardly justification for
20 disallowing their costs.

21

1 **Q. DOES RUCO RECOMMEND DISALLOWANCE OF THE COST OF THE**
2 **PORTION OF THE ABP AND STIP THAT IS BASED ON THESE**
3 **SERVICE QUALITY COMPONENTS?**

4 A. RUCO does not specifically recommend disallowance of the service
5 quality goals. However, Mr. Larkin expresses "significant concern
6 regarding the focus of the plans, particularly when significant payouts
7 were still made under the STIP and ABP plans despite the poor customer
8 service results." [Larkin, p. 20, lines 9 through 11] RUCO makes the
9 same observations about small payouts on service quality components
10 that Staff makes [Larkin p. 20, lines 2 through 7].

11 Mr. Larkin's concern—like Mr. Carver's—is based on the low payouts for
12 service quality in the test year. And like Mr. Carver, he overlooks the fact
13 that those low payouts reduce Qwest's revenue requirement in the test
14 year and that they result from enforcing the standards set in the plan. Mr.
15 Larkin's argument is no different from Mr. Carver's and, like Mr. Carver's,
16 provides no justification for disallowance of the service quality
17 components of the STIP and ABP.

18

19 **Q. DOES STAFF OR RUCO ASSERT THAT THE SERVICE QUALITY**
20 **COMPONENTS OF THE STIP AND ABP ARE UNREASONABLE,**
21 **UNNECESSARY OR IMPRUDENT?**

A. No. Nor do they assert the service quality components of the STIP and ABP are ineffective or contrary to ratepayer interests. They offer no sound reasons for disallowing the service quality components of either the STIP or APB.

Short Term Incentive Plan (STIP)

Q. DO YOU AGREE WITH STAFF'S PROPOSAL TO EXCLUDE 100% OF THE COST OF QWEST'S SHORT TERM INCENTIVE PLAN?

A. No. Staff argues that 100% of the cost of this plan should be removed from the test year because the Commission should not allow Qwest to recover from ratepayers the cost of incentive compensation plans that "focus heavily" on the achievement of increasing financial targets and enhancing corporate profitability and because the financial measures included in the STIP pertain to the Company's operation in all jurisdictions—not just the Company's Arizona operations. [Carver, p. 45, line 8 to p. 46, line 8 and p. 49, lines 5 through 7] Staff is rationalizing.

Mr. Carver's proposed solution is unreasonably punitive. If Mr. Carver believes Qwest management has designed a plan that—at 60%—focuses too heavily on financial results, an appropriate response would be for him to say how much of the plan, in his judgement, could properly be focussed on financial results and still be recoverable in rates. Then he should

1 propose disallowance of the portion of the plan that he believes violates
2 his standard, not the extreme solution of disallowing the entire cost of the
3 plan. If (as he testifies) he believes none of the financial components of
4 the plans should be allowed, then he might well propose disallowing all of
5 the financial performance portions of the plans. My earlier testimony
6 explains how financial incentives benefit ratepayers and I will not repeat it
7 here. But Mr. Carver's argument that the service quality components of
8 the STIP should be disallowed because they are poisoned by the financial
9 components of those plans makes no sense.

10

11 **Q. DO YOU AGREE WITH RUCO'S PROPOSAL TO EXCLUDE 50% OF**
12 **THE COST OF QWEST'S SHORT TERM INCENTIVE PLAN?**

13 A. No. RUCO argues that 50% of the cost of this plan should be removed
14 from the test year because the plan results in benefits to both ratepayers
15 and shareholders [Larkin, p. 18, line 18] and because of "significant
16 concern regarding the focus of the plans, particularly when significant
17 payouts were still made...despite poor customer service results." [Larkin,
18 p. 20, lines 9 through 11]

19 I have already explained why disallowing 50% of costs that foster or
20 improve business efficiency is not a sound rate making policy and should
21 not be applied to this particular cost as a rationalization to deny recovery.
22 So I will not repeat those arguments. I have also explained why Staff's

argument to disallow all of a plan because of its focus makes no sense and I will not repeat that explanation. And I have already explained how, under cost of service regulation, ratepayers always benefit from a utility's improved financial performance. RUCO offers rationalizations, not sound reasons for disallowing the incentive compensation pay of employees whose total compensation is otherwise allowable in the calculation of rates.

Annual Bonus Plan (ABP)

Q. DO YOU AGREE WITH STAFF'S AND RUCO'S PROPOSAL TO EXCLUDE 100% AND 50% RESPECTIVELY OF QWEST'S ANNUAL BONUS PLAN?

A. No. Mr. Larkin relies on the same reasoning that he uses for proposing a 50% disallowance of the STIP. My response is the same as it is to his STIP proposal. And while Mr. Larkin asserts that some of the specific business unit goals appear to be in direct conflict with ratepayer concerns, he concludes that the business unit goals appear to benefit both ratepayers and shareholders. [Larkin, p. 19, lines 5 through 20.]

Mr. Carver, on the other hand, asserts he is unable to reach any conclusion about any of the business unit goals because he lacks sufficient information to evaluate the reasonableness of the business unit component of the ABP. He makes this allegation despite the fact that

Attachment H in the response to Data Request No. UTI 60-11 contains over 60 pages of information that cover each business unit that charged costs to Arizona regulated operations. He asserts that in order to render an opinion, he must have copies of communications by business units to employees about the business unit goals and takes Qwest to task for not providing it. [Carver, p. 50, line 16 to page 51 line 2] Because he did not get what he wanted, he proposes to disallow all of the cost of the business unit portion of the ABP. [Carver, p. 49, line 10 to page 51 line 2.]

Exhibits PG-2 and PG-3 respectively are the responses of which Mr. Carver complains to Data Request No. UTI 53-02 and Data Request No. UTI 60-11. To the best of my knowledge and belief, the responses provided to these data requests are true and correct. They apparently provide enough detail for at least one witness hostile to Qwest to render an opinion on them.

Q. HOW DO YOU RESPOND TO MR. LARKIN'S ASSERTION THAT SOME OF THE SPECIFIC BUSINESS UNIT GOALS APPEAR TO BE IN DIRECT CONFLICT WITH RATEPAYER CONCERNS. [LARKIN, P. 19, LINES 6 THROUGH 20]

A. I believe that the remedy for work that directly conflicts with ratepayer concerns is to determine whether the work is unnecessary or imprudent, and if it is, to disallow all the costs of it. It makes no sense to disallow

50% of the cost of incentive compensation for all work simply because some work for which incentive compensation is paid may be found to be unnecessary or imprudent. Some of the Arizona work described in Mr. Larkin's testimony is recorded "below the line" in accounts that are not included in the calculation of revenue requirement. Of the work to which Mr. Larkin objects that is "above the line" I do not believe any of it is unnecessary or imprudent for a utility in an increasingly competitive marketplace to undertake and I do not believe the Commission should disallow a reasonable amount of cost for such work. Mr. Larkin's argument that 50% of the costs should be disallowed because some of the objectives he describes are at odds with RUCO's objectives appears retributive. If he believes certain work is objectionable, and it is not already excluded from regulated results of operations, then he can propose its disallowance. But suggesting that a few bad (as he sees it) apples spoils 50% of the whole bushel makes no sense.

Exhibit PG-4 is a copy of a portion of the response to Data Request No. UTI 60-14. I am including the narrative portion of the response and Attachment B, but not Attachment A which is redundant of information provided in my Exhibit PG-3. Attachment B identifies the amount of the business unit portion of the ABP by business unit. If the Commission determines that a business unit's activities should be disallowed, this information will allow the Commission to identify the amount of incentive compensation accrued for the business unit portion of the APB for that

business unit so that the Commission can calculate an appropriate level of disallowance, instead of 50% of the entire ABP.

Q. ARE STAFF'S ARGUMENTS FOR DISALLOWING 100% OF THE CORPORATE COMPONENT OF THE ABP THE SAME AS FOR THE STIP?

A. Yes. [Carver, p. 49, lines 5 through 7] My response is also the same as it was to Staff's STIP arguments. In my opinion, none of the reasons Mr. Carver offers for disallowing 100% of the STIP justify his proposal.

IT-Career Structure Bonus Plan (ITCSBP)

Q. WHY DOES STAFF PROPOSE TO DISALLOW 100% OF QWEST'S IT-CAREER STRUCTURE BONUS PLAN COSTS?

A. Mr. Carver claims that in responding to Staff's discovery, Qwest "has failed to provide detailed plan documentation and other related information concerning this plan." [Carver, p. 44, lines 1 through 3] Exhibit PG-5 is the response of which Mr. Carver complains to Data Request No. UTI 53-03. A review of Attachment A thereto shows that:

- The plan had a payout range of 0% to 10% with a maximum that could go to 12% of participating employees' base salary.
- The payout is comprised of two additive factors:

1. The overall IT business unit results account for 4% with a maximum that could go to 6% if the business unit payout was at 150% of target.
2. Actual individual results demonstrated by the fulfillment of individual performance objectives account for the remaining 6%.

- The individual performance objectives are based on a performance plan drawn up by an IT-Career Structure employee and his or her supervisor.
- For an employee to participate in the business unit component of the plan, the employee must participate in the individual performance portion of the plan by setting objectives and performing against the stated objectives.
- There were four equally weighted elements (each worth 1%) to the business unit component that comprised the 4% payout for overall IT business unit results. The data request response includes descriptions of each. The titles of the four elements for 1999 are:
  1. Financials (meet margin plan)
  2. Service, Batch and On-line Systems Availability
  3. Deliverables
  4. Year 2000 System Results

The response contains no information that supports Mr. Carver's contention that "it appears that the IT-Career Structure Bonus Plan is just another combination of the business unit and corporate components of the ABP...." [Carver, p. 44, lines 1 through 4] There is nothing in the response indicating the ITCSBP contains a corporate component. Instead of a corporate component, the plan contains an individual performance component of 6% that constitutes a 60% weighting in the plan. The response also explains that employees must develop their own individual performance targets and get supervisor approval of those targets.

With all the information the response provides, I can not agree with Mr. Carver's claim that,

> "Without additional information beyond that supplied in these responses, it is difficult to engage in any meaningful review of the plans and assess whether the costs should be charged to the Company's regulated ratepayers." [Carver, p. 44, lines 5 through 7]

Q. DOES STAFF OFFER ANY OTHER REASONS FOR DISALLOWING THE COST OF THE ITCSBP?

A. Yes. Mr. Carver suggests that 100% of the test year cost of the ITCSBP should be disallowed because "the plan will be transferred to an affiliate in the year 2000." [Carver, p. 43, lines 22—25] RUCO also raises a concern about "the significant changes in the IT personnel structure and the uncertainty regarding the allocation of their costs in the future." [Larkin, p. 21, line 7 through p. 22 line 3] However, Mr. Larkin proposes a 50% disallowance instead of Mr. Carver's 100% disallowance. [Larkin, p. 22, lines 3—4] The affiliate issue is only a rationalization for a disallowance.

The employees who were paid under the ITCSBP no longer work for Qwest Corporation and, effective December 31, 1999, have become employees of Qwest Information Technologies, Inc., (Qwest IT, formerly U S WEST Information Technologies, Inc.). The costs of the plan are now recorded on the books of Qwest IT along with all other costs for these

employees. Qwest bears the expenses of the plan to the extent the costs of Qwest IT employees are affiliate billed to Qwest.

There is no sound reason why the cost of the plan should be 100% disallowed or 50% disallowed because, instead of being incurred directly by Qwest, the cost is now incurred by an affiliate and billed to Qwest through affiliate billing. The cost of the plan should follow and be allowed to the same extent as all other employee compensation costs included in charges affiliate billed to Qwest.

Q. RUCO ALSO EXPRESSES CONCERN ABOUT THE COMPONENTS OF THE PLAN. [LARKIN, P. 21, L. 19 THROUGH P. 22, LINE 4] WHAT IS YOUR RESPONSE?

A. Mr. Larkin asserts that the plan should be subject to disallowance because "one of the components of the 1999 career structure bonus was the achievement of Y2K related goals." [Larkin, p. 21, lines 19 and 20] This argument makes no sense. Obviously, and as Mr. Larkin observes, "Y2K compliance will not be an issue in the future plan years." [Larkin, p. 21, line 23 and p. 22, line 1] However, the fact that a component constituting a 1% payout of the plan will have to be replaced with another objective hardly suggests that any cost of the plan should be disallowed. Y2K is merely a rationalization for a disallowance.

Conclusion

Q. DO YOU HAVE ANY CONCLUDING REMARKS REGARDING INCENTIVE COMPENSATION EXPENSE?

A. The proper test for determining whether a cost should be allowed in the calculation of rates is whether it is necessary, prudently incurred and reasonable in amount. If the cost of an employee's work passes that test, then all of the costs of that employee's work, including incentive compensation, should be included in cost of service. There is no just reason for imposing a special test for incentive compensation, which management, applying its expertise in the art of managing, uses to encourage employees to do their work well and with an eye toward specific objectives. Neither Staff nor RUCO have offered any reason for imposing a special hurdle for incentive compensation that other forms of compensation need not vault. They have used incentive compensation as a target of opportunity to decrease revenue requirement and offered rationalizations to justify their proposals.

1 **PENSION ASSET**

2 **Q. DO YOU AGREE WITH RUCO'S AND STAFF'S PROPOSAL TO**
3 **REMOVE PENSION ASSET FROM RATE BASE? [LARKIN, P. 29, LINE**
4 **8 TO P. 33. LINE 9; CARVER, PP. 116-134]**

5 A. No.

6

7 **Q. PLEASE EXPLAIN WHAT THE PENSION FUND IS.**

8 A. The pension fund is a trust (Pension Trust) that is a separate legal entity
9 from Qwest and, by law, is operated solely for the benefit of participating
10 employees and retirees. This is a very important point that bears
11 repeating. The Pension Trust and Qwest are completely separate legal
12 entities.

13

14 **Q. IS THERE A SURPLUS IN THE PENSION FUND?**

15 A. Yes. At the end of 1999, the pension plan's total benefit obligation was
16 computed under the rules of Statement of Financial Accounting Standards
17 No. 87 (FAS 87) to be $8.9 billion and the fair value of plan assets was
18 computed to be $14.6 billion. So the surplus was roughly $5.8 billion.

19

20 **Q. WHY IS THERE A SURPLUS IN THE PENSION FUND?**

A. Prior to Qwest's adoption of FAS 87 in 1987, the amount of pension expense reported for financial reporting purposes in any given year equaled the amount contributed to the pension fund for that year. The amount contributed was (and remains) subject to limitations under ERISA and federal income tax laws. After the adoption FAS 87, the recognition of pension expense was de-coupled from the amount of funding; pension expense became a computed amount.

Similarly, the FAS 87 rules for determining the amount of any *surplus or* deficit in a pension fund are not tied to the laws governing pension plan funding. So, right out of the box in 1987 the amount of surplus in the pension fund recognized under FAS 87 rules was roughly $1.9 billion, even though Qwest and its predecessors had never over-funded the plan under ERISA and tax laws.

While the plan has continued to pay pension benefits, there has been no funding of the Pension Trust since 1987. Nevertheless, the fair value of plan assets in the Pension Trust has grown from $6.6 billion at year-end 1987 to $14.6 billion at year-end 1999 and the computed surplus under FAS 87 has grown to $5.8 billion.

So the surplus arose when new measurement rules (FAS 87) were adopted and has grown since then as a result of higher than actuarially expected ("stellar" in Mr. Carver's parlance) returns on Pension Trust

investments. [Carver, p. 122, line 14; see also Attachment 1 to Mr. Larkin's testimony]

Q. IS ANY OF THIS MONEY RECORDED ON QWEST'S BOOKS?

A. No. The plan assets (including the surplus) belong to the Pension Trust and are recorded on the Pension Trust's books, not Qwest's books.

Q. WHO BENEFITS FROM THE SURPLUS?

A. Ratepayer, investors, current employees and retirees all benefit from the surplus. As the sole beneficiaries of the pension plan, retirees and current employees benefit from the surplus because it provides strong assurance that their pensions will remain fully funded. Investors benefit from the surplus because it prolongs the time before they will have to begin funding the pension plan and because some of the surplus can be used to pay health care benefits of current retirees. Ratepayers benefit from the surplus because it is one of the variables used in the calculation of pension expense credits recorded on Qwest's books (Pension Credits) that reduce cost of service.

Q. THEN WHAT IS THE PENSION ASSET?

A. The Pension Asset is a balance recorded on Qwest's balance sheet.

1

2 **Q. WHAT CAUSES THE PENSION ASSET ON QWEST'S BOOKS?**

3 A. The Pension Asset has been created by the recording of Pension Credits
4 on Qwest's books. Under FAS 87 accounting rules, pension expense is
5 computed using a five factor formula that takes into account 1) service
6 cost, 2) interest cost, 3) expected return on plan assets, 4) amortization of
7 transition asset and 5) amortization of prior service cost. The first,
8 second and fifth items typically generate positive expenses (charges).
9 Because of the surplus in the Pension Trust, the computation of the third
10 item (expected return on plan assets) and the fourth item (amortization of
11 transition asset) generate negative expenses (credits). The sum of these
12 five items has, for all but two years since Qwest's adoption of FAS 87 in
13 1987, generated a net negative expense (Pension Credit). The Pension
14 Credit is an accrued negative expense on Qwest's books (not the Pension
15 Trust's books).

16 Qwest cannot legally receive money from the Pension Trust to fund this
17 negative pension expense accrual. Consequently, Qwest must charge
18 this negative pension expense to a Pension Asset. So the Pension Asset
19 is the accumulation of negative pension expense (Pension Credits)
20 recorded in prior periods on Qwest's books.

21

22 **Q. WHO BENEFITS FROM PENSION CREDITS?**

A. Ratepayers, and to a small degree, investors benefit from Pension Credits. Ratepayers benefit from Pension Credits because they reduce cost of service and, therefore, put downward pressure on regulated rates. For instance, in the current test year, the Pension Credit puts downward pressure on revenue requirement by about $20 million. Investors benefit to a small degree from the Pension Credit because it increases reported earnings, but not cash flow.

Q. HAVE RATEPAYERS BENEFITED FROM ALL OF THE PENSION CREDITS RECORDED ON THE COMPANY'S BOOKS?

A. Yes. As I explained in my testimony concerning incentive compensation, ratepayers always benefit from decreases in costs reflected in regulated results of operations under cost of service regulation. Pension Credits are negative costs that reduce revenue requirement. Because every financial period is a test period (regardless of whether it warrants a case before the Commission), every dollar recorded as Pension Credit has a direct effect on revenue requirement. If revenue requirement changes enough, a rate case and a rates change will be warranted. But whether or not a rate case occurs, and regardless of the outcome of the case, ratepayers always benefit from the revenue requirement dampening effect of Pension Credits.

Mr. Carver observes that regulatory agencies are often reluctant to commit the required resources to pursue and process formal earnings complaint cases. [Carver, p. 132, lines 2 through 6] My experience suggests that utilities are also reluctant to file a case unless the outcome is likely to involve a significant change in rates. This reluctance to fully litigate a case unless the financial stakes are substantial does not diminish the benefit to utilities of any particular factor that increases revenue requirement nor the benefit to ratepayers of any factor (such as a pension credit) that decreases revenue requirement. It simply means that all the factors that make up revenue requirement, considered in aggregate, may not warrant a case.

Q. RUCO IMPLIES THAT THE PENSION ASSET IS "THE NET AMOUNT OF THE COMPANY'S PENSION OVER-FUNDING...." [LARKIN, P. 29, LINE 18] IS THIS CORRECT?

A. No. The surplus in the Pension Trust could be described (albeit inaccurately) as the "net amount of pension over-funding". However, it is not a correct description of the Pension Asset. The Pension Asset is the accumulation on Qwest's books of Pension Credits and pension expense debits over the years since Qwest's adoption FAS 87. Beginning on page 117, line 3, Mr. Carver's testimony also explains the accounting that creates the Pension Asset and on page 118, chronicles the Pension

1 Credits and debits that have resulted in the Pension Asset on Qwest's
2 books.
3
4 **Q. WHAT IS THE SOURCE OF FUNDING FOR THE PENSION ASSET?**
5 A. One of the fundamental accounting concepts that first year accounting
6 students learn is that all assets on a balance sheet must be funded by
7 liabilities or equity. Because Qwest cannot withdraw funding money from
8 the Pension Trust for negative expense and must, instead, debit the
9 Pension Asset, the source of funding for the Pension Asset is Qwest's
10 investors who provide the money to fund debt and equity on Qwest's
11 books.
12
13 **Q. MR. LARKIN CLAIMS THE PENSION ASSET SHOULD BE REMOVED**
14 **FROM RATE BASE BECAUSE THE COMPANY HAS NOT CLEARLY**
15 **DEMONSTRATED THAT THE PENSION ASSET HAS BEEN FUNDED**
16 **BY SHAREHOLDERS. IS HE CORRECT?**
17 A. No. The accounting that shows the Pension Asset is funded by investors
18 is rudimentary and clear. The source of funding for the Pension Asset is
19 the debt and equity on the Company's books. It follows that under the
20 same ratemaking standards that apply to the other major balances in the
21 Company's Arizona rate base, the Company has fully met its obligation to
22 demonstrate that investors have funded the Pension Asset.

In contrast, Mr. Larkin claims that the sources of the funding for the Pension Asset are:

> (1) the switch to accrual accounting when Statement of Financial Accounting Standards 87 (FAS 87) was adopted by the Company; (2) ratepayer payments to the Company for amounts of pension expense that were reflected in rates; and (3) earnings on the pension trust assets. . [Larkin, p. 30, line 10 to p. 31, line 2.]

None of these assertions is correct. The adoption of FAS 87 was not a financial transaction. So it could not be a source of funding. Instead, the adoption of FAS 87 was a change in accounting principle that made it possible for the Company to begin accruing the Pension Credits that gave rise to the Pension Asset.

Ratepayers' payments for services are clearly a source of positive cash flow. But they are not a source of funding. No sound accounting theory supports the contention that payments for services are contributions of capital to a privately held corporation.

Earnings on assets in the Pension Trust increase its balance. Increases in the Pension Trust balance increase the expected return on plan assets used in the calculation of pension expense. Increased expected return on plan assets reduces pension expense (in Qwest's case to a negative number). Accruing negative pension expense causes the accrual of the Pension Asset. However, the mere recording of these accruals provides no funding.

By law, Qwest cannot withdraw money from the Pension Trust for reimbursement of the Pension Credits recorded on its books. So Qwest must record negative pension expense under FAS 87 accounting rules, but can get no money from the Pension Trust to fund the negative expense. Without any other source for funding the asset, it falls to Qwest's investors to supply the capital for funding the Pension Asset. Contrary to Mr. Larkin's assertion, the earnings on the trust fund assets do not provide a source of funding for the Pension Asset because the law prevents Qwest from getting access to them for that purpose.

Q. WHY DOES STAFF BELIEVE THE PENSION ASSET SHOULD BE REMOVED FROM RATE BASE?

A. As I understand it, Mr. Carver's opinion is as follows:

- The Company improperly relies on its balance sheet accounting records for purposes of determining the amount that is includable in rate base. [Carver, p. 120, lines 18 and 19; p. 121, lines 5 through 14, p. 129, lines 16 through 19]
- In order to allow the Pension Asset in ratebase, the Company bears a burden of demonstrating that cumulative Pension Credits (the negative pension expense) of at least $62.2 million (intrastate) have been flowed through to its ratepayers. [Carver p. 119, lines 22 through 24; p. 120, line 25; p. 122, lines 17 through 20; p. 127, lines 15 through 17]
- The Company has not made this demonstration. [Carver, p. 120, lines 20 through 23; p. 121, lines 15 through 19; p. 128, lines 6 through 8, p. 128, lines 14 through 16]
- The Company can not make this demonstration because it is not possible to make this demonstration. [Carver, p. 120, lines 4 through 6;

p. 121, lines 15 through 19; p. 122, lines 20 and 21; p. 123, lines 17 and 18]

Q. DO YOU AGREE WITH MR. CARVER'S OPINION?

A. No. Mr. Carver has departed from sound ratemaking principles and invented his own special rule for deciding whether Pension Asset should be included in ratebase. By his own admission, it is not possible to satisfy his rule.

Q. WHY DO YOU SAY MR. CARVER HAS DEPARTED FROM SOUND RATE MAKING PRINCIPLES?

The primary components that must be considered for inclusion in rate base are:

1. Working Capital
2. Plant in service
3. Accumulated depreciation
4. Accumulated deferred taxes
5. Pension Asset

Of these five items, the last three are created by expense accruals: depreciation expense accruals create Accumulated Depreciation; deferred tax expense accruals create Accumulated Deferred Taxes, and negative pension expense accruals create the Pension Asset.

As Mr. Carver explains, under widely accepted rate making principles, a cost (which includes accrued expenses) is presumed to be covered by

existing rates, regardless of whether the cost of service study underlying those rates included a specific allowance for that unique cost. Were it otherwise, "the result could entail an endless reconciliation process comparing each element of actual costs during the rate effective period with the cost of service details underlying the preceding rate case order." [Carver, p. 132, lines 7 through 24] In fact, the rule against retro-active ratemaking is intended to prevent just such an "endless reconciliation process" (like the one Mr. Carver suggests must be performed to allow inclusion of Pension Asset in ratebase).

Under this widely accepted ratemaking principle, the balances on a utility's balance sheet that were created by accruals (Accumulated Depreciation, Accumulated Deferred Taxes, and Pension Asset) are treated as having been recovered or provided in rates whether or not they actually were.

> When rate base is constructed, the original cost of the assets is reduced by the accumulated provisions for depreciation. These accumulated provisions represent the prior years allocations [(accruals)] of depreciation for which the utility has had the opportunity to recover through rates but which recovery is not assured. [Principles of Public Utility Rates, Bonbright, Danielson and Kamerschen, (1988) p. 271, emphasis added]

Because this general principle is, and has long been accepted in Arizona, when the Commission reviews the ratebase in this proceeding, it will not require Staff and RUCO to engage in any reconciliation process to determine whether, and to what extent, the Company actually recovered in rates in prior years the Accumulated Depreciation and Accumulated

1 Deferred Taxes on Qwest's books. Instead, the parties, (including Staff)
2 will presume that the Company has recovered all Accumulated
3 Depreciation and all Accumulated Deferred Taxes on its books.

4 Regarding the Pension Asset, Mr. Carver's opinion departs from the
5 widely this accepted presumption. He claims that it has "limited
6 application" [Carver, p. 123, lines 3 through 7] and argues that the
7 Pension Asset can be included in ratebase only if the Company meets a
8 burden of a reconciliation process that shows that the Pension Credits
9 recorded on the books were flowed through to ratepayers in rates. He
10 also believes the Company cannot and could never meet that burden.

11

12 **Q. WHY DO YOU SAY MR. CARVER HAS INVENTED HIS OWN**
13 **STANDARD?**

14 A. Mr. Carver's testimony is careful to couch his advocacy concerning the
15 reconciliation requirement as his opinion. Mr. Carver's opinion—that the
16 Company bears a burden of demonstrating through a reconciliation that
17 cumulative Pension Credits (the negative pension expense) have been
18 flowed through to its ratepayers—is not a generally accepted ratemaking
19 principle. If it were, then the other elements of ratebase that are created
20 by expense accruals (Accumulated Depreciation and Accumulated
21 Deferred taxes) would also be subject to the same burden that Mr. Carver
22 would impose on the Pension Asset. In fact, his position directly violates

widely accepted ratemaking standards by contravening the rule against retroactive ratemaking.

Mr. Carver asserts that the widely accepted presumption that accrued expenses have been recovered or flowed through in rates does not extend to Pension Asset. [Carver, p. 132, line 24 through p. 133, line 2] However, he fails to offer any sound reason why Pension Asset should not be subject to the same ratemaking principles that govern the other elements of ratebase.

Q. MR. CARVER CLAIMS THAT, "THE QUESTION OF COST RECOVERY WITH REGARD TO NEGATIVE PENSION EXPENSE HAS A SUBSTANTIAL HISTORICAL CONTEXT WHICH, IF IGNORED, COULD LEAD TO INAPPROPRIATE CONCLUSIONS." [CARVER, P. 121, LINES 19 AND 20] DOESN'T THIS "SUBSTANTIAL HISTORICAL CONTEXT" JUSTIFY HIS DEPARTURE FROM WIDELY ACCEPTED RATEMAKING PRINCIPLES?

A. No. Mr. Carver recites the history of pension plan funding prior to and after the adoption of FAS 87 and observes that "the plan assets [in the Pension Trust] have accumulated over a long period of time, not just the last few years." [Carver, p. 122, lines 8 and 9] He also points out, correctly, that the high returns the Pension Trust has earned have "contributed to the negative pension expense being recorded by the

Company in accordance with FAS87, since 1987." [Carver, p. 122, lines 14 through 16] However, he offers no explanation about why he believes these factors justify a departure from widely accepted ratemaking principles and adoption, instead, of his proposed standard.

Accumulated depreciation and Accumulated deferred taxes also have a "substantial historical context." Like the funding of the Pension Trust and accrual of the Pension Asset, both Accumulated Depreciation and Accumulated Deferred Taxes have been created over long periods of time. Were the Commission to apply to them the same burden of reconciliation that Mr. Carver proposes for the Pension Asset, the reconciliation would, under Mr. Carver's interpretation of his own rule, extend back in time to the Company's first investment in Arizona. So a "substantial historical context" does not differentiate the Pension Asset from the other accrual-created balances on the Company's books and does not, in any event, justify a departure from widely accepted ratemaking standards.

Q. MR. CARVER ASSERTS THAT "IN SPITE OF THE REALITIES OF THE RATEMAKING PROCESS, THE COMPANY HAS BASICALLY RELIED ON AN 'AS RECORDED' COST RECOVERY THEORY...." [CARVER, P. 133, LINES 10 AND 11] HOW DO YOU RESPOND?

This assertion is curious. The Company relies on the "as recorded" cost recovery theory because of the realities of the ratemaking process, not in spite of them. Apparently, Mr. Carver seeks to create a separate and different reality for Pension Asset from the ratemaking reality that applies to the other elements of ratebase.

In the reality Mr. Carver seeks to create, he establishes a rule that, by his own admission, the Company can never satisfy. He proposes a reconciliation process to quantify the accumulated net pension recoveries from, or benefits provided to ratepayers. He complicates this process with his own set of conditions.

> First, I do not believe that it is possible to accurately quantify the accumulated net pension recoveries from or benefits provided to ratepayers. In order to prepare such a calculation, I believe that it would be necessary to reconcile the amount of actual pension costs recovered from ratepayers with the amounts actually contributed to the pension fund since the establishment of the pension plan. [Carver, p. 120, lines 4 through 9]

So under Mr. Carver's rule, the reconciliation of recorded expense to recovery and flow through must go back to the beginning of the pension fund and reconcile all of the rate orders and recorded expenses since then. He also requires that settlements of rate cases be ignored.

> In assessing the amount of pension credits flowed through to ratepayers, it is imperative that only those orders which specifically address the various components of cost of service be considered. [Carver, p. 126, lines 1 through 3]

By proposing a rule that requires a reconciliation back to the beginning of the pension plan, Mr. Carver has invented a "Catch 22" type of rule—one that, as he readily acknowledges, can never be satisfied.

Q. WHY DO YOU SAY MR. CARVER'S PROPOSED STANDARD FOR INCLUDING PENSION ASSET IN RATE BASE VIOLATES THE RULE AGAINST RETROACTIVE RATEMAKING?

A. Mr. Carver testifies:

> It is generally recognized that to allow utilities to collect additional funds from ratepayers in the future simply because expenses were incurred which had not been specifically provided for in the determination of the existing base rates is considered retroactive ratemaking. While past expenses are frequently employed in quantifying or developing the prospective cost of service on which overall rates are based, it is improper to establish future rates at levels intentionally designed to recover past losses or under-recoveries due to historical imbalances in the matching of rates and actual expenses. [Carver, p. 133, lines 3 through 9]

Mr. Carver's Pension Asset proposal would do exactly what he says is improper retroactive ratemaking. His reconciliation is a matching of recovery provided by prior rates with actual expenses accrued and capitalized on Qwest's balance sheet. To the extent recovery of negative expense by ratepayers was less than the negative expense accrued, he would recognize only the lesser amount. Hence, he would establish future rates at levels intentionally designed to remedy ratepayers' alleged

past under-recoveries of pension credits by reducing the capitalized balance to the level of actual recoveries.

His proposal violates the rule against retroactive ratemaking in the same way the rule would be violated if Qwest were allowed to reduce Accumulated Depreciation because the amount of depreciation included in rates was less than the amount of depreciation it recorded on its books in prior rate effective periods. The only difference between Mr. Carver's proposed retroactive ratemaking treatment of Pension Asset and the retroactive ratemaking treatment of Accumulated Depreciation I have just described is that his case deals with credits to pension expense and mine deals with debits to depreciation expense.

Q. DO YOU SEE ANY INCONSISTENCIES IN MR. CARVER'S ARGUMENTS AND HIS CONCLUSION THAT RATEPAYERS HAVE NOT RECEIVED SUBSTANTIAL BENEFITS FROM THE RECORDING OF PENSION CREDITS? [CARVER, P. 123, LINE 10]

A. Yes. On the same page that Mr. Carver asserts ratepayers have not received substantial benefits [Carver, p. 123, line 10], he also asserts that it is not possible to accurately quantify the benefits ratepayers have received. [Carver, p. 123, lines 17 and 18] With regard to cases in which revenue requirement was settled, Mr. Carver also admits, "I am unable to conclude what amount of any pension credits were embedded within the

test years used in either of these proceedings or whether any credits were partially or fully flowed through to benefit ratepayers...." [Carver, p. 126, lines 26 through 30]

If it is not possible to accurately quantify the benefits provided to ratepayers, then any conclusion that ratepayers have received no substantial benefits necessarily must be questioned.

If it is not possible for the author of a proposed standard to determine whether or not it has been met, then that standard should be questioned. The fact that Mr. Carver offers two different calculations of the benefits ratepayers have received [Carver Appendix SCC-1 and Appendix SCC-2], and that these two calculations differ by more than $100 million, suggests and illustrates why the reconciliation standard that he advocates is not workable or reasonable.

Q. BOTH STAFF AND RUCO CITE THE COMMISSION'S ORDER IN QWEST'S LAST RATE CASE IN SUPPORT OF THEIR POSITION. [CARVER, P. 133, LINE 16 THROUGH P. 134, LINE 14; LARKIN, P. 29, LINES 15 THROUGH 23] WHY HAS QWEST TAKEN A POSITION DIFFERENT FROM THE COMMISSION'S PRIOR ORDER?

A. Qwest respectfully disagrees with the conclusion the Commission reached in the prior order. As my testimony makes clear, we believe the Commission should determine the amount of Pension Asset by applying

1 the widely accepted standard for determining the elements of ratebase[2]
2 instead of Mr. Carver's proposed standard.
3
4 **Q. HOW DO YOU RECOMMEND THE COMMISSION TREAT THE**
5 **PENSION ASSET FOR RATEMAKING PURPOSES?**
6 A. I recommend that the Commission reject the imposition of Mr. Carver's
7 proposed standards for inclusion of Pension Asset in ratebase and,
8 instead, employ the widely accepted standard of establishing ratebase
9 that relies on balances as recorded. I recommend the Commission not
10 deny investors their right to recover a return on their capital invested in the
11 Pension Asset. Therefore, I recommend the Commission make no
12 adjustment to remove the Pension Asset from rate base.
13 If the Commission chooses to deny investors a return on the Pension
14 Asset by imposing a reconciliation burden that cannot be met, then the
15 Commission should 1) ensure that no further Pension Asset is created by
16 ceasing any further recognition of negative pension expense in regulated
17 results of operations and cost of service and 2) return the Pension Asset
18 to investors by amortizing it into cost of service over an appropriate
19 amortization period.
20 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

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[2] In an Order adopted December 17, 1987, in Docket 86-497, the FCC ruled, at paragraph 43 regarding items to be included in rate base, "We will allow deferred charges related to...pension fund payments in

1 A. Yes.

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excess of expenses recognized for regulatory purposes."

BEFORE THE

ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF U S WEST COMMUNICATIONS, INC. A COLORADO CORPORATION, FOR A HEARING TO DETERMINE THE EARNINGS OF THE COMPANY FOR RATEMAKING PURPOSES, TO FIX A JUST AND REASONABLE RATE OF RETURN THEREON AND TO APPROVE RATE SCHEDULES	)	DOCKET NO. T-01051B-99-0105

EXHIBITS OF

PHILIP E. GRATE

QWEST CORPORATION

August 21, 2000

PHILIP E. GRATE: CURRICULUM VITAE

BUSINESS ADDRESS

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LICENSURE

Mr. Grate is a licensed Certified Public Accountant in Washington and is admitted to the Washington State Bar to practice law.

EDUCATION

Mr. Grate earned a Bachelor of Science Degree in Business Administration with a concentration in Accounting from Indiana University, Bloomington. Mr. Grate also earned a Juris Doctorate from Indiana University, Bloomington.

EMPLOYMENT

From 1982 to 1984, Mr. Grate was a senior tax consultant for Touche Ross, a Certified Public Accounting firm that subsequently became part of Deloitte & Touche.

In 1984, Mr. Grate became a manager of tax research for Pacific Northwest Bell Telephone Company, Inc. In 1987, Mr. Grate became the Tax Attorney for Pacific Northwest Bell, Northwestern Bell, and Mountain Bell, the predecessors of U S WEST Communications, Inc. Mr. Grate's staff and he were responsible for advising U S WEST Communications, Inc. on matters related to tax planning and compliance and for representing the company before regulatory commissions on tax related matters. In 1990, Mr. Grate accepted a position as Director of Accounting Standards for U S WEST Communications, Inc. His staff and he were responsible for U S WEST Communication's compliance with Generally Accepted Accounting Principles (GAAP) and the accounting rules promulgated by the Federal Communications Commission (FCC) including Parts 32 and 64 of Title 47 of the Code of Federal Regulations. In 1995, Mr. Grate became Director – State Finance, where he serves as the company's representative to state regulatory agencies concerning accounting and finance matters and as an expert witness in proceedings before state regulatory agencies.

TESTIMONIES

Mr. Grate has testified on the following topics in the following proceedings:

Regulatory Accounting

Iowa Department of Commerce - Utility Division in Docket No. RPU-93-9

Cost of Service Revenue Requirement

Utah Public Service Commission Docket No. 95-049-05
Utah Public Service Commission Docket No. 97-049-08
Washington Public Service Commission Docket No. UT-970766

Depreciation

Utah Public Service Commission Docket No. 95-049-22

Federal Income Taxation in Cost of Service

Utah Public Service Commission Docket No. 88-049-07

Merger of U S WEST, Inc. and Qwest Communications International Inc.

Utah Public Service Commission Docket No. 99-049-05
Arizona Corporation Commission Docket No. T-01051B-99-0497

Sale of Telephone Exchanges

Idaho Public Utilities Commission Case Nos. USW T-99-25 and CTC T-99-2
Arizona Corporation Commission Docket No. T-01051B-99-0737

Arizona
Docket No. T-1051B-99-105
UTI 53-002

INTERVENOR: Arizona Corporation Commission Staff (Utilitech)

REQUEST NO: 002

Please identify each incentive, bonus and variable compensation arrangement in place for U S WEST, Inc. personnel in 1999 and provide the following information for each such arrangement:

1. Copies of plan documents describing all terms and conditions governing compensation amounts,

2. Common language description of each compensation plan (as provided to participants, if available),

3. Statement of each input amount used to calculate the actual amount of compensation earned by each participant in the arrangement in 1999, including but not limited to earnings and cash flow metrics, business goals/objectives, and individual or group achievement targets.

4. Calculations of compensation earned by each participant in each plan, using the input data from (c), above and plan document formulae from (a), above

5. Actual compensation under each plan for each officer level employee of U S West, Inc.

6. Total Compensation (all employees) under each plan by U S WEST, Inc. RC in 1999,

7. Allocable amounts from (f) within recorded Arizona intrastate expenses of USWC in 1999,

8. Allocable amounts from (f) within recorded Arizona intrastate expenses of USWC in December 1999, as included in the Company's annualized expenses for the test period.

RESPONSE:

1. There were five active incentive or bonus plans/arrangements in U S WEST Inc., during the 1999 test year.

1999 Annual Bonus Plan (ABP)
1999 Short-Term Incentive Plan (STIP)
1997 Long-Term Incentive Plan (LTIP)
1998 Long-Term Incentive Plan (LTIP)

Merit Award grants

Please refer to Confidential Attachment A which includes copies of the ABP business unit component plan documents for U S WEST, Inc. The corporate component of the ABP is the same as the 1999 STIP.

While there is not a specific plan document for the 1999 Short-Term Incentive Plan, please refer to response UTI 60-11 Confidential Attachment C for the plan as approved by the Human Resources Committee of the Board of Directors.

The 1997 and 1998 LTIPs were both active in 1999. However, these are three year plans and eligibility was determined the first year of the plan, 1997 and 1998 respectively. Please refer to response UTI 2-17 c - g, for information on the 1997 and 1998 LTIPs. Confidential Attachment F is the stock plan under which grants for the LTIP were made.

Merit Awards are approved on an individual basis. Please refer to UTI 60-11 #3 Confidential Attachment F for the form used to recommend employees for this incentive arrangement.

2. Individual business units handle the communication of the ABP to individual employees. No copies are available. Please see Attachment B for the employee orientation presentation on the Annual Bonus Program. Please refer to response UTI 53-3 #2 for information provided to I/T employees regarding the ABP.

STIP and LTIP awards are communicated individually with employees at the time of grant. Please refer to Confidential Attachment C (1999 folio) which contains plan information provided to employees participating in these plans.

Merit awards are granted on an individual basis and communicated verbally to the award recipient at the time of grant.

3. The 1999 Annual Bonus Program performance inputs were as follows:
   * Corporate Component (Same as STIP inputs listed below) 60%
   * Business Unit Component (See Confidential Attachment A) 40%

The STIP and the corporate component of the annual bonus program inputs were as follows:

* 60% Financial
  - Net Income (20%)
  - Cash Flow (20%)
  - Revenue (20%)
* 40% Service
  - Consumer CVA (10%)
  - SBG CVA (10%)
  - BGS CVA (10%)
  - Wholesale - Provisioning (5%)
  - Wholesale - Repair (5%)
* Total Target 100%

Please refer to UTI 2-17 Part E for information on inputs in the 1997 LTIP.

Please refer to UTI 2-17 Part F for information on inputs in the 1998 LTIP.

Merit awards are granted on an individual basis for special assignments or projects completed. There are no specific inputs for merit awards.

4. The calculations of compensation earned by each individual participant in each of the bonus or incentive plans is voluminous. Please contact Pamela Morrow, 303-672-1762, to arrange a mutually convenient time and place to review them. Provided below are the calculations used to compute compensation for each of the plans.

Confidential Attachment D provides the formula for the funding of the ABP program as well as the formulas used to determine individual bonus payouts. Please note that all payouts under the annual bonus program consider individual performance and are subject to management discretion.

At the beginning of the year, the target payout for participants in the 1999 STIP is communicated individually to each employee in the plan. This target amount is expressed as a percentage of salary. STIP is calculated by multiplying that target payout times the participant's salary times the corporate performance results (from the STIP inputs above). Please note that all payouts under the annual bonus program, regardless of target amount and corporate performance results, consider individual performance and are subject to management discretion.

Participants in the 1997 & 1998 LTIPs are provided Dividend Equivalent Units (DEUs) at the beginning of the plan year. The number of DEUs awarded to participants is communicated individually with each participant. Each of these plans has a three year performance period (12 Quarters) regarding the inputs in UTI 2-17 Parts E & F. The dividends awarded to stockholders over these 12 quarters are summed and the multiplied by the performance results and multiplied by the number of DEUs a participant holds.

Merit Awards are granted on an individual basis for special assignments or projects completed. Amount of award varies depending upon performance and is determined by the management team.

5. Please refer to Confidential Attachment E for officer level compensation of U S West, Inc.

6. Confidential Attachment H provides the total salary compensation of all employees by RC in 1999 in U S WEST, Inc.

7. Confidential Attachment G provides the Arizona intrastate allocable amount of U S WEST, Inc. salaries for the year 1999.

8. Please see Confidential Attachment G for the Arizona intrastate amount of U S WEST, Inc. salaries for the month of December 1999.

Confidential Attachments A through H are being provided pursuant to the terms of the Protective Agreement.

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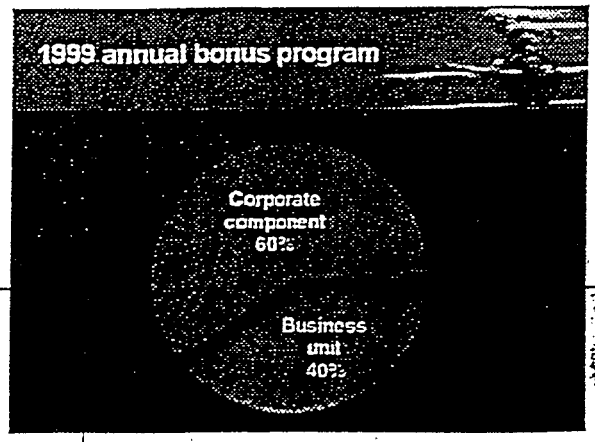
UTI 53-002
Attachment A
Redacted

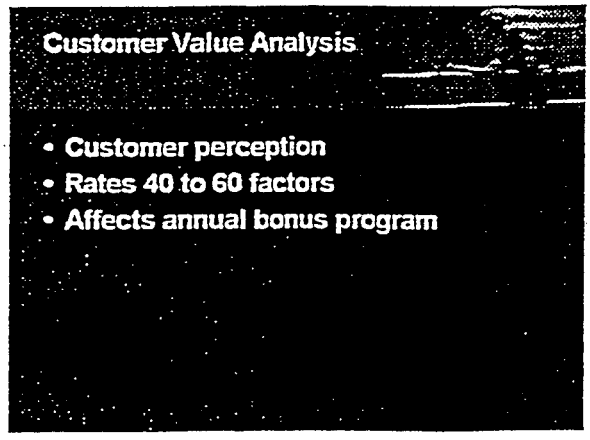
Will be provided pursuant to the terms of the protective agreement.

Employee Orientation Presentation

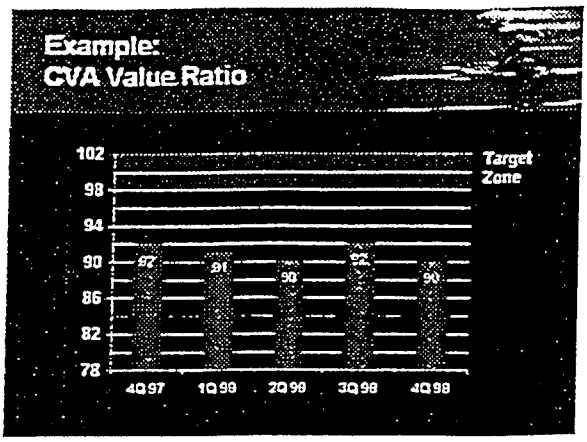
Introduction to Human Resources

ARIZONA
DOCKET NO. T-01051B-99-0105
UTI53- 002
ATTACHMENT: B





Introduction to Human Resources



1999 annual bonus opportunity range

SALARY GRADE	BONUS OPPORTUNITY RANGE
10, 306	10-40%
5, 305	8-30%
4, 304	6-18%
3, 303	5-15%
2, 302	5-15%
2A	4-10%
1B	4-10%
C3-C9	3-7%

O&T, Sales, IT and AT are on a different plan

UTI 53-002
Attachments C through F
Redacted

Will be provided pursuant to the terms of the protective agreement.

Arizona
Docket No. T-1051B-99-105
UTI 60-011

INTERVENOR: Arizona Corporation Commission Staff (Utilitech)

REQUEST NO: 011

Re: USWC responses to UTI 2-17 (Incentive Compensation). Please supplement the referenced response to include comparable information associated with each incentive compensation plan or arrangement that was active during the 1999 test year. [For reference purposes, the question, as updated, is reproduced below.]

1. A statement of the recorded costs of the plan/arrangement by month and by FCC Account.
2. Calendar year 1999 and 2000 actual recorded costs for each such plan, in a format comparable to the response to part (a), above.
3. A description of the plan/arrangement in the form approved by senior management and the Board of Directors.
4. A description of the plan/arrangement in the form presented to employees and other participants.
5. A statement of the 1999 objective measures of performance employed by the plan or ranges for same.
6. A statement of the comparable actual "achieved" levels of performance in relation to each objective for calendar 1999.
7. Also, please provide the pay-out matrix used to compare actual achievements with the target objectives.

RESPONSE:

1 & 2 Please see Confidential Attachments A and B for the calendar years 1999 and 5 months 2000 recorded incentive compensation expenses as booked to Total State Arizona by month and by FCC Account. Included in these attachments are a break out of the Annual Bonus Plan and Performance Bonus Plan from the 19C Management Team Awards. In addition, the IT-Career Structure Bonus Plan in 1999 has been added. In the year 2000 the IT-Career Structure Bonus Plan transfers to the affiliate.

Confidential Attachments A and B are being provided pursuant to the terms of the Protective Agreement.

3. There were eight active incentive bonus plans or arrangements in 1999:
   1) 1999 Annual Bonus Plan (ABP)
   2) 1999 Short-Term Incentive Plan (STIP)
   3) 1999 Performance Bonus Plan
   4) 1999 BRI Annual Bonus Program
   5) 1999 IT-Career Structure (IT-CS) Bonus Plan
   6) 1997 Long-Term Incentive Plan (LTIP)
   7) 1998 Long-Term Incentive Plan (LTIP)

8) Merit Awards

The corporate component of the Annual Bonus Plan is the same as the 1999 STIP as approved by the Human Resources Committee of the Board of Directors. Please see Confidential Attachment C for a description of the plan as presented to the Board.

Please see Confidential Attachment D for a description of the 1999 Performance Bonus Plan as presented to senior management.

Please see Confidential Attachment E for the Annual Bonus Plan for Business Resources Inc. (BRI) Occupational employees as presented in the contract between U S WEST BRI and the Communications Workers of America. This bonus plan is an extension of the Annual Bonus Plan for which BRI managers are eligible, therefore, for the remainder of this response, the BRI Annual Bonus Plan will be collapsed into the ABP.

Please refer to UTI 53-03 #1 Confidential Attachment A, for the 1999 IT-CS Bonus Plan as presented to senior management.

The 1997 and 1998 LTIP plans were included in the original response to UTI 2-17 and do not need updating.

Merit awards are approved on an individual basis. Please refer to Confidential Attachment F for the form used to recommend employees for this incentive arrangement.

4. Individual business units handle the communication of the ABP to individual employees. No copies are available. Please refer to response UTI 53-02 #2 Confidential Attachment B, for information provided at employee orientation regarding ABP. Please refer to response UTI 53-03 #2 Confidential Attachment B, for information provided to Information Technology employees regarding the ABP. Please refer to Confidential Attachment E for the BRI ABP as presented in the contract.

STIP is communicated individually with employees. Please refer to response UTI 53-02 Confidential Attachment C for information sent to Executives and Executive Directors regarding STIP.

Please see Confidential Attachment D and G for a description of the 1999 Performance Bonus Plan as communicated to employees.

Please refer to response UTI 53-03 #2 Confidential Attachment B, for information provided to employees regarding the 1999 IT-CS Bonus Plan.

The 1997 and 1998 LTIP plans were included in the original response to UTI 2-17 and do not need updating.

Merit awards are granted on an individual basis and communicated verbally to the award recipient at the time of grant.

5. The 1999 Annual Bonus Program performance measures were as follows:

* Corporate Component (same as STIP measures listed below) 60%.
* Business Unit Component (see Confidential Attachment H) 40%

1999 STIP performance measures were as follows:

* 60% Financial
  - Net Income (20%)
  - Cash Flow (20%)
  - Revenue (20%)
* 40% Service
  - Consumer CVA (10%)
  - SBG CVA (10%)
  - BGS CVA (10%)
  - Wholesale - Provisioning (5%)
  - Wholesale - Repair (5%)
* Total Target 100%

Please refer to Confidential Attachment I for the performance measures of the Performance Bonus Plan.

Please refer to response UTI 53-03 #3 Confidential Attachment A for the performance measures of the IT-CS Bonus Plan.

There is no update to the information provided in UTI 2-17 for the 1997 LTIP performance measurement.

There is only one performance measure for the 1998 LTIP. That measure is Total Revenue Increase Percentage.

Merit awards are granted on an individual basis for special assignments or projects completed. There are no performance measures for merit awards.

6. The results of the business unit component (for each unit) of the 1999 Annual Bonus Plan can be found in Attachment H. The results for the corporate component of the Annual Bonus Plan are the same as the 1999 STIP performance results and can be found in Confidential Attachment J. Overall, the results for the 1999 Annual Bonus Plan were 90.8% of the total targeted amount.

Please refer to Confidential Attachment J for 1999 STIP performance results.

Please refer to Confidential Attachment K for information regarding the achieved results under the 1999 Performance Bonus Plan. Payout was a minimum of 75% for second, third and fourths quarters.

The IT-CS Bonus Plan results as a percentage of target are as follows:

* Financials - 110.90%
* Service - 110.80%
* Deliverables - 100%
* Y2K - 150.00%

The 1997 LTIP was a three-year plan covering calendar years 1997 - 1999. Please find performance results in Confidential Attachment M.

The 1998 LTIP is a three-year plan covering calendar years 1998 - 2000. Due to the merger with Qwest and the consequent Change in Control, the 1998 LTIP was paid out at target in 2000.

Merit awards are granted on an individual basis for special assignments or projects completed. There are no global measures of achievement for merit awards.

7. Please refer to Confidential Attachment J for 1999 STIP payout matrix.

The payout matrix for the corporate component of ABP can be found in Confidential Attachment J (it is the same as the Matrix for the 1999 STIP). Please refer to UTI 60-14 #5 regarding payout matrices for the business unit component of the ABP.

Please refer to Confidential Attachment L for PBP payout matrix.

Please refer to Confidential Attachment N for IT-CS Bonus Plan payout matrix.

The payout matrix for the 1997 LTIP can be found in Confidential Attachment M.

The payout matrix for the 1998 LTIP is as follows:

Revenue	Payout
Greater than 7% Growth	150%
3% - 6% Growth	100%
2% Growth	50%
Below 2% Growth	0%

Merit awards are granted on an individual basis, and therefore no payout matrix exists.

Confidential Attachments A through N are being provided pursuant to the terms of the Protective Agreement.

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UTI 60-011
Attachments A through N
Redacted

Will be provided pursuant to the terms of the protective agreement.

Arizona
Docket No. T-1051B-99-105
UTI 60-014

INTERVENOR: Arizona Corporation Commission Staff (Utilitech)

REQUEST NO: 014

Re: USWC responses to UTI 2-17 (Incentive Compensation). Please provide the following information with regard to the Business Unit component of the 1999 test year ABP incentive compensation plan. [Note: The format containing most of this information is presented in the confidential response to Staff/UTI 35-8 in the pending New Mexico rate proceeding.]

1. Please identify and describe each individual business unit.
2. For each individual business unit, please provide the performance target(s).
3. For each individual business unit, please provide the achieved result(s).
4. For each individual business unit, please provide the weighting factors used to derive the composite achieved results.
5. For each individual business unit, please provide the pay-out matrix.
6. For each individual business unit, please provide a copy of the plan documentation.
7. For each individual business unit, please provide copy of the information distributed to employees and other participates which discuss, describe and outline plan year terms, conditions and expectations.

RESPONSE:

USWC is responding to only Part 3 of this request for the business unit component of the 1999 ABP for the following Market Units because the charges they generated in Arizona were for services rendered to Arizona Public Policy, not for activities that supported their own state's business unit criteria:

Public Policy, Colorado, O3
Public Policy, Idaho, O8
Public Policy, Iowa, O5
Public Policy, Minnesota, O6
Public Policy, Montana, O9
Public Policy, Nebraska, O7
Public Policy, New Mexico, O4
Public Policy, North Dakota, OA
Public Policy, Oregon, OD
Public Policy, South Dakota, OB
Public Policy, Utah, OE
Public Policy, Washington, OF
Public Policy, Wyoming, OC

The expenses charged to Arizona regulated results of operations for the business unit component of the ABP of these 13 business units is included under the heading "Public Policy" in Confidential Attachment B to this response.

Expenses for the business unit component of the ABP for the following business units did not originate at USWC, but rather at affiliates of USWC. To the extent Arizona regulated results of operations incurred any charges during the 1999 test year for the business units components of the ABP for these affiliates, they would have been incurred through affiliate billings to USWC. With regard to these business unit components of the ABP, USWC is responding to Parts 1, 2, 4, 5, 6, and 7 of this request. With regard to Part 3 of this request, the amount of any charges to Arizona regulated results of operations for these business unit components will be provided as soon as it is available in the form of a supplemental response to this request if, and to the extent such information can be determined without a special study.

Corporate Development, T3 (U S West, Inc.)
Federal Services, B2 (U S Comm. Federal Services)
Flight, H6 (BRI, Inc.)
Long Distance, G1 (U S West Long Distance)
Malheur Home Telephone, V1
Operns.& Tech., Adv.Tech., K2 (U S Technologies, Inc.)
Public Policy, Federal Office, OH (U S West, Inc. & U S West Federal Relations)
Strategy, T2 (U S West, Inc.)
Trust Management, M4 (U S West, Inc.)
U S West Dex, Inc., X1
Wireless, D1 (U S West Wireless, LLC)

1. Each business unit is identified at the top of the plan document which can be found in Confidential Attachment A.

2. Please find the requested information in Confidential Attachment A.

3. Confidential Attachment B provides Arizona's estimated Business Unit portion of the Annual Bonus Plan by individual business unit for the year 1999. The estimated Business Unit portion was allocated to the individual business units based on percentages of responsibility codes charged for the Annual Bonus Plan in 1999. They should be considered estimates.

4. Please find the requested information in Confidential Attachment A.

5. The requested documents are voluminous. The information is available for review on-site in Denver Colorado. Please contact Pamela Morrow at 303-672-1762 to make arrangements.

6. Please find the requested information in Confidential Attachment A.

7. Individual business units handle the communication of the ABP to individual employees. No copies are available. Please refer to response UTI 53-02 Confidential Attachment B for information provided at employee orientation regarding ABP. Please refer to response UTI53-03 #2 Confidential

Attachment B, for information provided to Information Technology employees regarding the ABP.

Confidential Attachments A and B are being provided pursuant to the terms of the Protective Agreement.

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UTI 60-014
Attachment B
Redacted

Will be provided pursuant to the terms of the protective agreement.

Arizona
Docket No. T-1051B-99-105
UTI 53-003

INTERVENOR: Arizona Corporation Commission Staff (Utilitech)

REQUEST NO: 003

Please identify each incentive, bonus and variable compensation arrangement in place for U S West Information Technologies personnel in 1999 and provide the following information for each such arrangement:

1. Copies of plan documents describing all terms and conditions governing compensation amounts,
2. Common language description of each compensation plan (as provided to participants, if available),
3. Statement of each input amount used to calculate the actual amount of compensation earned by each participant in the arrangement in 1999, including but not limited to earnings and cash flow metrics, business goals/objectives, and individual or group achievement targets.
4. Calculations of compensation earned by each participant in each plan, using the input data from (c), above and plan document formulae from (a), above
5. Total Compensation (all employees) under each plan for IT in 1999,
6. Allocable amounts from (e) within recorded Arizona intrastate expenses of USWC in 1999,
7. Allocable amounts from (e) within recorded Arizona intrastate expenses of USWC in December 1999, as included in the Company's annualized expenses for the test period.

RESPONSE:

1. Please find copies of plan documents for the two incentive plans active in Information Technologies for test year 1999 in Confidential Attachment A. Information Technology employees are eligible for either the Annual Bonus Program or the IT-Career Structure (IT-CS) Bonus Plan.

Employees at the officer level in I/T are covered under the 1999 Short Term Incentive Plan (STIP) and 1997 and 1998 Long Term Incentive Plan (LTIP). Information on the 1997 and 1998 LTIP plans was provided in Confidential Attachment C of UTI 2-017. Please refer to UTI 53-02 #1 - #4 for information regarding STIP.

2. Please find the descriptions of the Annual Bonus Program and the IT-CS Bonus Plan in place for I/T employees in Confidential Attachment A. These descriptions were available to employees via U S WEST's internal website.

3. Please refer to Confidential Attachment A which includes the inputs for the business unit component of the IT-CS Bonus Plan and Annual Bonus Program. The inputs to the corporate component of the Annual Bonus Plan can be found in response UTI 53-02 #3.

Individual objectives required under the IT-CS bonus plan are recorded in individual employee performance plans or files and not held centrally.

4. Please refer to response UTI.53-002 #4 Confidential Attachment D, for information regarding the calculation of individual employee payouts under the Annual Bonus Program.

Information on how the IT-CS Bonus Plan is calculated can found in Confidential Attachment A.

5. Please see Confidential Attachment B for the estimated total compensation amounts for U S West Information Technologies, Inc. employees in 1999.

6. Please see Confidential Attachment B for the estimated amount allocated to Arizona intrastate of USWC in 1999.

7. Please see Confidential Attachment B for the estimated amount allocated to Arizona intrastate of USWC in December 1999.

Confidential Attachments A and B are being provided pursuant to the terms of the Protective Agreement.

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Finance Analyst
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Seattle, WA 98191

UTI 53-003
Attachment A
Redacted

Will be provided pursuant to the terms of the protective agreement.

UTI 53-003
Attachment B
Redacted

Will be provided pursuant to the terms of the protective agreement.

BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF U S WEST COMMUNICATIONS, INC., A COLORADO CORPORATION, FOR A HEARING TO DETERMINE THE EARNINGS OF THE COMPANY, THE FAIR VALUE OF THE COMPANY FOR RATEMAKING PURPOSES, TO FIX A JUST AND REASONABLE RATE OF RETURN THEREON, AND TO APPPROVE RATE SCHEDULES DESIGNED TO DEVELOP SUCH RETURN.	)	**DOCKET NO. T-1051B-99-105**
	)	**AFFIDAVIT OF PHILIP E. GRATE**
STATE OF WASHINGTON	) :	**ss**
COUNTY OF KING	)	

Philip E. Grate, of lawful age being first duly sworn, depose and states:

1. My name is Philip E. Grate. I am State Finance Director of Qwest Corporation in Seattle, Washington. I have caused to be filed written testimony and exhibits in support of USWC in Docket No. T-01051B-99-0105

2. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct to the best of my knowledge and belief.

Further affiant sayeth not.

Philip E. Grate

SUBSCRIBED AND SWORN to before me this 17th day of August, 2000.

ANGIE LEIFER
NOTARY PUBLIC
COMMISSION EXPIRES 8-08-02
STATE OF WASHINGTON

Notary Public residing at
Seattle, Washington.

My Commission Expires: 8/8/02

BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF U S WEST COMMUNICATIONS, INC., A COLORADO COLORADO CORPORATION, FOR A HEARING TO DETERMINE THE EARNINGS OF THE COMPANY, THE FAIR VALUE OF THE COMPANY FOR RATEMAKING PURPOSES, TO FIX A JUST AND REASONABLE RATE OF RETURN THEREON AND TO APPROVE RATE SCHEDULES DESIGNED TO DEVELOP SUCH RETURN	)	DOCKET NO. T-01051B-99-0105

REBUTTAL TESTIMONY OF CARL INOUYE

ON BEHALF OF

QWEST CORPORATION

AUGUST 21, 2000

REBUTTAL TESTIMONY OF CARL INOUYE

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IDENTIFICATION OF WITNESS

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Carl Inouye and my business address is 1600 7th Avenue, Seattle, Washington, 98191.

Q. PLEASE STATE YOUR POSITION AND RESPONSIBILITIES WITH QWEST CORPORATION ("QWEST" OR "COMPANY").

A. I am employed by Qwest as Lead Director Financial Advocacy. In that capacity I am responsible for the presentation of financial matters before the state regulatory commissions that regulate Qwest.

Q. PLEASE DESCRIBE YOUR EDUCATION AND PROFESSIONAL EXPERIENCE.

A. Exhibit CTI-1, attached to this testimony, describes my education and professional experience.

PURPOSE OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is respond to the testimony of Staff witness Shooshan as it relates to competitive zones and in the alternative a price regulation plan for Qwest's Arizona intrastate operations.

Q. PLEASE SUMMARIZE YOUR TESTIMONY.

A. Qwest generally supports moving away from traditional rate of return (ROR) regulation toward price regulation and, ultimately, to reliance on competitive forces to determine price and service offerings. The Company complements the Staff for its forward thinking. The mixing of competitive entry with traditional ROR regulation is a mixture of polar opposites that has produced a strange brew of regulation that favors competitors. While Qwest is concerned with the specific conditions of Mr. Shooshan's alternative, its basic structure is useful for describing a price regulation plan that Qwest would favor.

The price regulation plan proposed by Mr. Shooshan does not provide Qwest with any new pricing flexibility for its existing services. In fact, it appears to take away existing pricing flexibility and impose rate reductions upon Qwest that would not otherwise occur. Nor, does the plan offer any specifics as to how future pricing flexibility would be granted, other than through the existing Commission process. In sum, there is little movement toward equalizing how the Commission controls Qwest's prices versus how it controls that of Qwest's competitors.

In response to Mr. Shooshan, I propose a price regulation plan that Qwest would favor. The Qwest proposal follows Mr. Shooshan's basic plan structure. The Qwest plan involves two baskets of services, each with pricing rules. The competitive zone concept described in Mr. Teitzel's direct testimony is incorporated into the Qwest plan as the means to move services from the basic/essential basket to the competitive basket. The Qwest plan is put forward for the Commission's consideration.

RESPONSE TO MR. SHOOSHAN'S PROPOSED PLAN

Q. DO YOU AGREE THAT PRICE REGULATION IS GENERALLY MORE BENEFICIAL AS COMPARED TO THE CURRENT FORM OF REGULATION?

A. Yes, I agree with Mr. Shooshan that price regulation avoids rate proceedings, such as this docket, in which considerable time and resources of the Company and the Commission are spent reviewing financial records and litigating the archaic intricacies of ratemaking. I also agree that price regulation can produce benefits to customers in the form of increased investment and price protections.

Q. DO YOU AGREE THAT THE INCENTIVE TO INVEST CAPITAL IS IMPROVED UNDER MR. SHOOSHAN'S PROPOSED PRICE REGULATION?

A. No. While I generally agree that the incentive to invest can be greater under price regulation, I do not agree that the price regulation plan proposed by Mr. Shooshan will increase the incentive to invest. The reason is because Mr. Shooshan's plan does not afford Qwest the same opportunity to operate as its unregulated competitors. Competitors have the freedom in head to head competition with Qwest to determine their prices without regulatory intervention. For Qwest, however, the same regulatory price controls that currently exist are maintained in Mr.

Shooshan's price regulation plan with little prospect for improvement during the plan's 5-year term for increases pricing flexibility.[1]

With no change in pricing flexibility, Mr. Shooshan's plan does little to bring about the benefits generally attributed to price regulation.[2]

Q. IS ONE OF THE PURPOSES OF PRICE REGULATION TO PROVIDE GREATER PRICING FLEXIBILITY?

A. Yes, it is. Mr. Shooshan testifies that "[P]rice regulation directly protects consumers and provides the incumbent with a greater flexibility to respond to competitors." (Testimony of Shooshan, p. 7, L.10-11) However, the price regulation plan proposed by Mr. Shooshan does not provide Qwest with any greater pricing flexibility for existing services.

Q. PLEASE EXPLAIN HOW EXISTING REGULATORY PRICE CONTROLS ARE MAINTAINED, IF NOT INCREASED, IN MR. SHOOSHAN'S PROPOSED PLAN.

A. Turning to Mr. Shooshan's Attachment 1, Page 1, Basket 3 contains services that "streamlined" pricing flexibility has already been granted to Qwest. In other words, the creation of Basket 3 does not in any way

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[1] It appears to Qwest that Mr. Shooshan's proposed plan would actually diminish pricing flexibility for existing services, an effect that is discussed further below. The only new price flexibility appears to be for new retail services and bundled packages.

[2] Given the infrequency of general rate cases in Arizona, the last rate case being 5 years ago which happens to coincide with the price regulation plan, and the proposed 20% annual reduction of access charges, "hard caps" on Basket 1 services, and the 5% annual "consumer dividend", Mr. Shooshan's proposed plan is heavily stacked. Normal regulatory lag with the option to file a rate case at any time before 5 years pass would better serve Qwest financially.

provide greater price flexibility beyond what the Commission has already granted Qwest.

Qwest has previously been granted pricing flexibility for special access/private line services. Nevertheless, under Mr. Shooshan's proposal, special access/private line appears in Basket 2, where there is no mention of the existing pricing flexibility.3

Qwest has been granted "streamlined" pricing by the Commission for several existing "service packages," which under Mr. Shooshan's proposal are placed in Basket 1 where no pricing flexibility would exist.

Finally, all the services in Basket 1 are price capped for 5 years. Under ROR regulation, the same services are "price capped" in the years between rate cases. Given the frequency of Arizona rate cases, Mr. Shooshan's proposal is no change from existing regulation.

Q. WHY IS THERE LITTLE PROPECT FOR IMPROVEMENT FOR INCREASED PRICE FLEXIBILITY?

A. Mr. Shooshan states that pricing flexibility could be achieved by moving a service from Basket 1 "Basic/Essential Services" to Basket 3 "Advanced/Competitive/Nonessential Services" upon a showing that the requirements of A.C.C. R14-2-1108 are met. This process for achieving greater pricing flexibility is no different from that which exists today. The

[3] Mr. Shooshan recommends 20 percent annual price reductions until parity with interstate rates is achieved. His recommendation refers generally to access, with no distinction between switched and special access. Qwest's special access and private line tariffs have been merged.

same pricing flexibility could be achieved under ROR regulation with the same showing. Thus, Mr. Shooshan's plan provides no improvement in the prospect for increased pricing flexibility.

Mr. Shooshan goes on to state that "a less rigorous test might be warranted once a price-cap plan is in place" (Id., p.11, L.14-25) and suggests limiting the number of alternative providers to one and no longer considering market share as examples of a less rigorous test. Such details should be specified now for Qwest to evaluate the proposed plan.

Q. DOES THE PRICE-CAP INDEX FOR BASKET 1 ALLOW ANY REBALANCING OF RATES OR ANY OTHER PRICING FLEXIBILITY?

A. No. Mr. Shooshan states that prices within Basket 1 "could be increased or decreased as long as the weighted average price level for the basket as a whole is within the overall price-cap index." (Id., p. 12, L. 7-9) However, given the so-called "hard cap" in which no price could be increased above the level existing on the first day of price regulation and the inclusion of a consumer dividend in the price-cap index, no meaningful rebalancing or pricing flexibility is being offered to Qwest.[4]

This is best illustrated by examining the operation of the "hard cap" and price-cap index in the first year of the plan. With all prices set at their starting levels, and no ability due to the "hard cap" to raise any price in Basket 1 above its starting level, there is no opportunity to accomplish any

[4] The price-cap index should not be confused with the granting of price flexibility. It is nothing more than a surrogate for rate case ratemaking, albeit a formula that is self-activating.

rebalancing.[5] The fact of the matter is that the only pricing flexibility offered is downward pricing with no concomitant opportunity to make offsetting increase in other prices.[6] Only if Qwest were to make broad price reductions among the services in Basket 1 would it have the ability to accomplish any measure of rate rebalancing and then only by reducing some prices more than others.

Q. OVERALL, IS THE PRICE REGULATION PLAN PROPOSED BY MR. SHOOSHAN ACCEPTABLE TO QWEST?

A. No, it is not. Given that Mr. Shooshan's alternative price regulation plan offers no greater price flexibility than exists today, and appears to take away existing price flexibility, Qwest is unable to conclude that the proposed plan is a move forward.

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[5] By definition, "rebalancing" means raising some prices while lowering other prices.

[6] It is interesting to note that if in year 2 inflation less productivity less the consumer dividend was positive, Qwest would have the authority, but not the means, to raise the overall weighted average price because the "hard cap" prevents any individual prices from being raised higher than its initial price.

THE QWEST ALTERNATIVE PROPOSAL

Q. PLEASE DESCRIBE MODIFICATIONS TO MR. SHOOSHAN'S PROPOSED PRICE REGULATION PLAN THAT QWEST WOULD FAVOR.

A. Qwest would favor a two "basket" approach in which the pricing controls within the baskets are different than that proposed by Mr. Shooshan. Plus, Qwest believes that the competitive zone concept can be combined with the "basket" approach.

Q. PLEASE DESCRIBE THE TWO BASKET APPROACH.

A. There would be two baskets. Basket 1 would be "basic/essential" services.7 Basket 1 would have the same services as in Mr. Shooshan's proposal, but with the following changes:

(1) Switched access services would be included in Basket 1. Switched access services appear in Mr. Shooshan's Basket 2, which is eliminated in the Qwest proposal.

(2) Flat rated residential and business local service would continue to be included only to the extent of the primary line, i.e., the first line. This basket is limited to the first line in recognition of the emergency nature of

[7] For convenience, I have maintained the same basket labels as Mr. Shooshan. There is no intended correlation between the meaning of "basic" and "essential" as used in my testimony with any definition of those terms as may appear in any Arizona Commission order.

local service. The second line and beyond are included in a new Basket 38 in order to achieve parity in price flexibility with competitors.

(3) PBX trunks, including features, would continue to be included in Basket 1, but only to the extent of the primary trunk, i.e., the first trunk. The reason is the same as with flat rated residence and business.

(4) Telephone Assistance Program would remain in Basket 1, but any price controls would be limited to changes in funding sources. In other words, if any external to Qwest funding sources change, their effects would automatically be flowed through to customers.

(5) Services to non-LEC payphones would be included in Basket 1. These are in Basket 2 of Mr. Shooshan's proposal.

(6) Existing service packages will switched to the Qwest Basket 3. Several of the existing service packages, e.g., Custom Choice and Value Choice, already have price flexibility. It makes no sense that they, other existing packages, and new packages would be treated differently.

(7) In Mr. Shooshan's proposal, all other services that have not been classified as "competitive" or which are not currently afforded flexible pricing are included in Basket 1. In the Qwest proposal, all other services that are not explicitly listed in Basket 1 will be included in Basket 3. Basket 3 by Mr. Shooshan's own admission include "nonessential"

[8] In order to maintain a parallel with Mr. Shooshan's proposal, the Qwest two baskets are labeled 1 and 3. There is no Basket 2.

services. It is reasonable that that which is not "basic" or "essential" is "nonessential."

Q. PLEASE DESCRIBE THE QWEST BASKET 3.

A. Basket 3 would include the services listed by Mr. Shooshan and the additions enumerated above. In addition, Basket 3 would include special access/private line, which reside in Mr. Shooshan's Basket 2. The Commission has previously granted pricing flexibility. It would be reasonable and appropriate to maintain that price flexibility by including special access/private line in the Qwest Basket 3.

Q. HAVE YOU SUMMARIZED THE QWEST TWO BASKET APPROACH IN AN EXHIBIT?

A. Yes. Exhibit CTI-2 lists the services in each of the two baskets.

Q. HOW SHOULD WHOLESALE SERVICES BE TREATED?

A. Other than switched access, special access, and payphones, wholesale services offerings such as unbundled network elements, should continue to be regulated pursuant to the Commission's oversight of interconnection agreements and through the arbitration hearing and cost docket processes. I believe that this treatment is consistent with Mr. Shooshan's testimony, although I would not add wholesale services to either of the baskets. (Id., p.12, L. 17-21)

Q. PLEASE DESCRIBE QWEST'S PROPOSED PRICE CONTROLS THAT WOULD APPLY TO BASKET 1.

A. The services in Basket 1 would be subject to an overall weighted average price cap as described by Mr. Shooshan. (Id., p. 12, L. 1-9) This overall weighted average price cap would be fixed for the term of the plan. There would not be a so-called "hard cap" on individual services, nor would the weighted average cap be subject to Mr. Shooshan's proposed price-cap index.

Within Basket 1, Qwest would be allowed to rebalance prices as long as the weighted average price of the basket did not increase beyond the level that exists after rates are determined in the rate design portion of this docket.

Q. DOES THIS MEAN THAT SWITCHED ACCESS RATES WOULD BE LOWERED?

A. Yes. Qwest's proposal in the rate design portion of this docket is that switched access rates be reduced. Assuming that the Commission reduces switched access rates, such a reduction would be reflected in the weighted average price cap for Basket 1. Subsequently during the term of the price regulation plan, reductions in switched access could be made in conjunction with rate rebalancing with other services in Basket 1. The inclusion of switched access in Basket 1 would allow for reasonable rate rebalancing to proceed.

Q. PLEASE DESCRIBE QWEST'S PROPOSED PRICE CONTROLS THAT WOULD APPLY TO BASKET 3.

A. The services in Basket 3 would be subject to an overall weighted average price cap, similar to that described for Basket 1, but that is 15 per cent

above the weighted average prices established by the Commission at the conclusion of this docket. This overall weighted average price cap would be fixed for the term of the Plan. Qwest would be free to adjust the prices of services in Basket 3 upward or downward as long as the weighted average prices of the services in Basket remained equal to or less than the weighted average price, plus 15%, that existed on the effective date of the Plan.

Q. WHAT ROLE WOULD COMPETITIVE ZONES PLAY IN THE QWEST PROPOSED PRICE REGULATION PLAN?

A. Competitive zones would exist in conjunction with the basket approach. A mechanism is needed in which regulatory recognition is given to the geographic nature of competitive entry. It is well known that competitors enter urban geographic areas, with an array of telecommunications, internet, and video services. Thus, Qwest proposes that competitive zones be based upon geographic designations and upon Commission order adopting the competitive zones, services within the zones would be moved to Basket 3, assuming they were not already in Basket 3.

Q. WERE THE DETAILS OF COMPETITIVE ZONES PREVIOUSLY DESCRIBED IN QWEST TESTIMONY?

A. Mr. Teitzel previously outlined Qwest's competitive zone proposal in his Direct Testimony.

Q. DOES QWEST CONTINUE TO PROPOSE CERTAIN COMPETITIVE ZONES BE APPROVED BY THE COMMISSION IN THIS DOCKET?

A. Yes. Mr. Teitzel's recommends such designations in his Direct Testimony.

Q. MR. SHOOSHAN CRITICIZES COMPETITIVE ZONES. DO YOU AGREE?

A. No, I do not. Mr. Shooshan testifies that competitive zones can be confusing to customers and needlessly complex to oversee and administer. (Id., p. 4, L.8-11) Competitive zone process has been operational in the State Oregon since 1996. Previously, statewide competitive zones have been approved in Oregon for several local exchange carriers, including Qwest, for private line services. Most recently, the Oregon Commission approved competitive zone designation in 49 Qwest exchanges for residence and business local basic services. This approval was accomplished without the Oregon Commission holding a public hearing. The Oregon Commission Staff, operating with criteria established by the Commission, simply confirmed by contacting CLECs that the criteria was being met and notified the Commission of its findings. The Oregon Commission then approved the creation of the newest competitive zones.

The Utah Commission recently approved via a bench order the establishment of a competitive zone along the Wasatch Front in which all Qwest business local services were granted price flexibility.

The Oregon and Utah Commissions have not determined that competitive zones are confusing to customers, nor needlessly complex to oversee or administer.

Q. WHAT TERM DOES QWEST PROPOSE FOR THE PLAN?

A. Qwest proposes that the price regulation plan have a 3 year term with a 90 day window in which Qwest may elect to renew the plan for another 3 year term.

Q. WHY DOES QWEST PROPOSE A 3-YEAR TERM WITH A 90 DAY WINDOW TO RENEW?

A. As outlined in the rebuttal testimony of Mr. Redding, the Arizona intrastate year 2000 financial returns for the first 5 months of the year point to a significant decline in intrastate earnings. The Company believes this earnings trend reflects increased efforts to improve service quality. Improvement in service quality has been a concern of the Commission. Increased depreciation expense as a result of the represcription ordered by the Commission adds more expense.

It is impossible for Qwest to predict the outcome of the ratemaking portion of this docket, both revenue requirement and rate design.[9] Given the uncertainty as to the final outcome of the revenue requirement and rate design portions of this docket, Qwest is unable to commit to a price regulation plan longer than the proposed 3 year term, if to a price regulation plan at all.

Q. WHAT DOES QWEST PROPOSE WOULD HAPPEN AFTER THE EXPIRATION OF THE SECOND 3 YEAR TERM?

[9] For instance, Staff proposes a minimal $7 million rate increase and RUCO proposes a $28 million rate reduction.

A. In the event that Qwest elected to renew the Plan for the second 3 year term, at its expiration, Qwest proposes that rate of return regulation not be reinstated, provided that the Commission and the FCC will have granted 271 approval. This provision eliminates the possibility of a rate case in 6 years whereby any competitive losses would be passed back to basic customers at that time. Conditioning this provision on 271 approval assures that the markets in which Qwest participates in, Qwest's network, and Qwest's operational support systems have been opened to competitors.

At the expiration of the second 3 year term, the Commission would either deregulate the Qwest operation or institute another price regulation plan.

Q. WILL THE PRICE REGULATION PROPOSED BY QWEST PROVIDE THE CUSTOMER BENEFITS DESCRIBED BY MR. SHOOSHAN?

A. Yes, I do. The Qwest proposed price regulation plan shifts the risk associated with increasing competition from basic customers to the Company. Qwest will not be able to ask the Commission to increase basic service rates, even at the expiration of the plan.

This plan eliminates many existing regulatory processes. Rate cases would be eliminate along with the time consuming process of financial audits and interrogatories, rounds of testimony, and extensive hearings, not to mention the legal wrangling that is inevitable.

The Qwest price regulation plan includes reasonable controls on price changes on the services in Basket 1. The overall weighted average price

cap ensures that prices cannot be increased without the lowering of prices of other services in Basket 1. It is reasonable to include switched access in Basket 1 so that rate rebalancing will occur over time.

Reasonable price controls apply to Basket 3 where the same overall weighted average price cap as Basket 1, but with an additional 15% upward limit. Given that the services in Basket 3 are either competitive or non-essential and that this price regulation plan replaces ROR regulation and its accompany process for raising rates, it is reasonable that Qwest be given some measure of upward pricing flexibility on an overall basis for Basket 3. The 15% increment is the only element in the Qwest Plan whereby Qwest could increase its net revenues by raising prices without a concomitant reduction in other prices.

The separation of services between Basket 1 and 3, each with separate overall price caps, prevents cross-subsidization between the basic services in Basket 1 and the advanced, competitive, or non-essential services in Basket 3.

The Qwest Plan leaves in place Commission oversight of service quality, customer remedies, and payments.

The inclusion of new services and packages in Basket 3 provides incentive to Qwest to offer innovative services and service packages, including new price plans.

The flexibility to adjust prices of the services in Baskets 1 and Basket 3 in combination with the competitive zones provides increased incentive to Qwest to make capital investment in the State of Arizona in order to meet competitors.

Q. HAVE YOU PROVIDED A DESCRIPTION OF THE COMPLETE DETAILS OF THE QWEST PROPOSED PLAN?

A. Yes. Exhibit CTI-3 provides the Commission with a detailed description of the Qwest proposal.

RESPONSE TO OTHER PORTIONS OF MR. SHOOSHAN'S TESTIMONY

Q. MR. SHOOSHAN PROPOSES THREE CONDITIONS WITH RESPECT TO CURRENT LITIGATION INVOLVING QWEST. DO YOU AGREE WITH THE CONDITIONS?

A. No, I do not. As I understand the litigation, the issue is over disparate treatment by the Commission in how it regulates competitors of Qwest versus how it regulates Qwest. I believe that disparate treatment is largely eliminated in the price regulation plan described in this testimony. The adoption of the Qwest price regulation plan is the way to resolve the current litigation.

As I explained in Section 2 of this testimony, the price regulation plan proposed by Mr. Shooshan does not close the gap in terms of the pricing flexibility competitors of Qwest are afforded by the Commission. Rather, it appears that Qwest pricing flexibility would actually be diminished by Mr. Shooshan's plan. Thus, his recommendation that Qwest be required to withdraw current litigation, agree not to pursue new litigation, and intervene in support of the Commission in any litigation filed by another party is unacceptable.

Q. IS MR. SHOOSHAN'S RECOMMENDATION THAT THE COMMISSION CONSIDER A PRICE OFFSET RELATED TO SERVICE QUALITY REASONABLE?

A. No, it is not. The Company's service quality was addressed in Docket No. T-01051B-99-0497, the merger of Qwest and U S WEST. In its order

approving the merger, the Commission made certain changes that have the effect of increasing amounts that Qwest will have to pay for service quality. The areas in which increased payments will be made are exactly the three areas of operations (access to centers, held orders, and out of service repair) in Mr. Shooshan's testimony (Id., p. 19, L.7-24). It is unreasonable that less than 2 months after merger approval that Staff would propose more regulatory conditions for that which was already addressed in the merger docket.

Q. MR. SHOOSHAN SUGGESTS THAT QWEST PROPOSE SPECIFIC INVESTMENT COMMITMENTS AS PART OF A PRICE REGULATION PLAN. WHAT IS YOUR RESPONSE?

A. In Docket No. T-01051B-99-0497, Staff recommended that Qwest commit to invest a minimum of $692 million in Arizona for each of the next two years from the date of the order approving the merger. Qwest stated that it was committed to continuing to make the necessary investments in Arizona. The Commission did not accept Staff's proposal, but rather ordered a minimum of $402 million of capital investment for the years 2000 and 2001, with at least 12% of that amount, $48 million, directed toward the upgrade and extension of services in Qwest exchanges of 50,000 access lines or less.

Investment of a specified amount capital will not necessarily improve service quality. The Commission addressed service quality in the merger docket when it ordered higher service quality payments. A commitment in this docket of additional capital investment to improve service quality is not necessary.

With respect to capital investment to support new services, the price regulation plan should be constructed so that sufficient incentive exist that all competitors have the incentive to offer new services.

Q. DOES THIS CONCLUDE YOUR TESTMONY?

A. Yes.

BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF U S WEST COMMUNICATIONS, INC., A COLORADO COLORADO CORPORATION, FOR A HEARING TO DETERMINE THE EARNINGS OF THE COMPANY, THE FAIR VALUE OF THE COMPANY FOR RATEMAKING PURPOSES, TO FIX A JUST AND REASONABLE RATE OF RETURN THEREON AND TO APPROVE RATE SCHEDULES DESIGNED TO DEVELOP SUCH RETURN	)	DOCKET NO. T-01051B-99-0105

EXHIBITS OF CARL INOUYE

ON BEHALF OF

QWEST CORPORATION

AUGUST 21, 2000

INDEX OF EXHIBITS

Witness Qualifications	CTI-1
Price Regulation Plan Proposed by Qwest, Proposed Service Baskets	CTI-2
Qwest Corporation, Arizona Price Regulation Plan	CTI-3

Carl Inouye
Witness Qualifications

Present Employment:
Lead Director – Financial Advocacy
Responsible for regulatory matters of a financial nature in the states USWC operates

Academic Experience:
BA – University of Washington, Economics
BS – University of Washington, Mechanical Engineering
MA – University of Washington, Economics

Prior Work Experience:
1974-1977: Pacific Northwest Bell Telephone Company, Business Research Section; responsible for economic and econometric studies

1978-1981: AT&T; managed preparation of witnesses and their economic studies for the U.S. v. AT&T antitrust suit that led to the breakup of the Bell System, worked in areas of financial effects of divestiture on the Bell System, network planning and operations, demand and cost modeling, organization theory and design, and research and development.

1992-1987: U S WEST Communications; worked in various positions in finance and treasury involving long term debt financing, jurisdictional separations, acquisitions, financial planning

Testifying Experience:
Oregon:
UT 80: Alternative Form of Regulation
UT 85: general rate case
UM 295: research and development policy
UP 96: sale of telephone exchanges to PTI
UT 119: collocation tariff
CP 1, 14, 15: entry of local exchange competitors
UM 351: pricing and costing policy
UT 125: general rate case

Utah:
91-049-13: deregulation of voice messaging
92-049-05: general rate case
94-049-08: general rate case
95-049-05: general rate case
97-049-08: general rate case
92-999-04: adoption of SFAS 106
93-049-22: adoption of SFAS 112
94-049-02/03: sale of exchanges
89-049-11/21: contribution expenses on remand
88-049-18: tax reform act on remand
93-999-01: competitive entry and regulatory reform

Washington
UT-961596: sale of Bellcore
UT-970766: general rate case

UT-980948: directory imputation
UT-991358: Qwest/U S WEST merger
UT-003013: Cost and Pricing of UNE Transport, Termination, Resale

Idaho
USW-S-96-5: general rate case

Arizona
T-01051B-99-0497: Qwest/U S WEST merger

PRICE REGULATION PLAN PROPOSED BY QWEST
PROPOSED SERVICE BASKETS

Basket 1 – Basic/Essential Services:
Flat Rate Residential – Primary Line only
Flat Rate Business – Primary Line only
2 & 4 Part Service
Exchange Zone Increment Charges
Low Use Option Service
Service Stations Service
Telephone Assistance Programs
Individual PBX Trunks, incl features – Primary Trunk only
Caller ID Block
Toll Blocking
900/976 Blocking
Basic Listing Service
Switched Access Services
Non-LEC Payphones (i.e., answer supervision, payphone access line)

Basket 2: not used

Basket 3 – Advanced/Competitive/Nonessential Services:
Transparent LAN Service
Frame Relay Service
Megabit Services
Lan Switching Service
ATM Cell Relay Service
Private Line Transport Services (includes Special Access)
CustomChoice – Residence and Business
Value Choice with CallerID
Value Choice with Call Waiting
Two Line CustomChoice
SmartSet, SmartSet Plus
Fax Package
Teen/Roommate Package
Home Office Package
Business Continuation Routing
ISDN – Single Line
ISDN – Primary Rate Service
Integrated T-1 Service
IntraCall Service
MTS
Two-Point MTS
1-800 U S WEST Calling Service
Directory Assistance – Local and National
U S WEST Complete-A-Call Service
Operator Verification/Interrupt Service
Special Hour Discount
Volume Discount
Guaranteed Rate Calling Connection

Basket 3 – Advanced/Competitive/Nonessential Services (continued)*:
Calling Connection Plans
Obsolete MTS
Special Reversed Charge Long Distance Service
Wide Area Telecommunications Service
Outward WATS
800 Service
800 ServiceLine Option
Large User Discount
Central Office Services
Customized Call Management Services/Centron I Service
Optional Service Features
Centron Custom
Centrex Plus Service
Centrex 21 Service
Centrex Prime Service
CO-ACD
Scan-Alert Service
Obsolete Central Office Services
Customized Call Management Service/Centron I
Centron 6 and Centron 30
Traffic Data Report Service
Call Data Collection and Transmission Service
Trackline Plus Service
Residence Premises Wire Maintenance
UNISTAR Service/U S WEST Repair Coordination Service
Switchnet 56 Service
Inside Wire Maintenance
New "Stand-Alone" Services
New Service Packages
All other existing Service Packages
Flat Rate Residential – Second Line and beyond
Flat Rate Business – Second Line and beyond
Individual PBX Trunks, incl features – Second Trunk and beyond

* All other services currently offered by Qwest that are not included in Basket 1 are included in Basket 3, including those that are listed below.

QWEST CORPORATION

ARIZONA PRICE REGULATION PLAN

I. PURPOSE

This Price Regulation Plan ("Plan") sets forth the terms and conditions under which Qwest Corporation ("Qwest") is regulated by the Arizona Corporation Commission ("Commission"). Upon its effective date, the Plan shall govern the prices, charges, terms and conditions for the provision of regulated telecommunications services by Qwest. While the Plan is in effect, Qwest will not be subject to rate of return regulation by the Commission.

II. EFFECTIVE DATE AND TERM

A. Expiration This plan will be effective upon the date ordered by the Commission. It will remain in effect for a term of three years from its effective date. Qwest will have the option to renew this Plan for one additional three year term upon written notice to the Commission at least ninety (90) days prior to its expiration date, upon the terms and conditions effective at the expiration date unless a new plan is submitted by Qwest for Commission approval.

B. Early Termination During the initial period or any renewal period, Qwest may terminate this Plan upon ninety (90) days written notice:

In the event the United States Congress, the Arizona Legislature or the Commission either permits deregulation of the industry or permits forms of regulation which are determined by the Commission to be less restrictive than this Plan.

C. Post Expiration If Qwest elects to renew this Plan for an additional three year term, at the end of such term and condition upon the Commission's and the Federal Communications Commission's approval of a Qwest 271 application, at the end of such additional three year term ROR regulation shall not be reinstated. The Commission shall deregulate the Qwest operations or institute another price regulation plan.

III. BASIC/ESSENTIAL SERVICES (BASKET 1)

A. Definition Basic/Essential Services are those services listed on Exhibit A.

B. Initial Prices The initial prices of basic/essential services are those set in the final rate design as ordered by the Commission in Docket No. T-01051B-99-105.

C. Price Cap The services in Basket 1 shall be subject to an overall price cap equal to the weighted average prices of the services in

Basket 1. The price cap shall be calculated based upon the initial prices of the services, weighted by current quantities, and shall remained fixed for the term of the Plan.

D. Price Changes Qwest may change prices of the services in Basket 1, either upward or downward, subject to the provision that the weighted average prices of the services in Basket 1 shall not exceed the price cap set forth in paragraph III.C. Qwest shall provide 10 days notice to the Commission prior to any price change.

Qwest may change terms and conditions of the services in Basket 1 upon 10 days notice to the Commission.

IV. ADVANCED/COMPETITIVE/NONESSENTIAL SERVICES (BASKET 3)

A. Definition Advanced/Competitive/NonEssential Services are those services listed on Exhibit A.

B. Initial Prices The initial prices of advanced/competitive/nonessential services are those set in the final rate design as ordered by the Commission in Docket No. T-01051B-99-105.

C. Price Cap The services in Basket 3 shall be subject to an overall price cap equal to the weighted average prices of the services in Basket 3, plus 15%. The price cap shall be calculated based upon the initial prices of the services, weighted by current quantities and multiplied by 1.15, and shall remained fixed for the term of the Plan.

D. Price Changes Qwest may raise prices of the services in Basket 3 upon 1 day notice to the Commission. Qwest may lower prices of the services in Basked 3 without notice to the Commission. Qwest may change terms and conditions of the services in Basket 3 upon 1 day notice to the Commission.

V. COMPETITIVE ZONE

A. Definition A competitive zone is a geographic area, no smaller than a wire center, in which the Commission has determined that competition exist such that Qwest should be allowed price flexibility as described in paragraph IV.

B. Criteria A competitive zone shall be established if at least one of the following criteria is met: 1) a competitor has facilities in place and is marketing or offering services in competition with Qwest,; 2) a reseller is marketing or offering services in competition with Qwest; or 3) a competitor is marketing or offering services through the provision of unbundled network elements purchased from Qwest.

C. Initial Designations Upon adoption of the Plan, the wire centers listed on Exhibit B are designated as a competitive zones.

D. Subsequent Designations Upon a petition and demonstration of Qwest, the Commission shall designate competitive zones when the criteria in paragraph V.B. are met. Upon designation by the Commission of new competitive zones, the services offered by Qwest in the new competitive zones shall be moved from Basket 1 to Basket 3, to the extent they do not already reside in Basket 3.

VI. INCREASES OR DECREASES DUE TO EXOGENOUS FACTORS

A. The Commission, after reasonable notice and opportunity for hearing, may prescribe proportional increases or decreases in the prices of appropriate services In Baskets 1 and 3 to reflect changes in revenues, expenses, and investments, due to exogenous factors beyond the control of Qwest.

VII. UNIVERSAL SERVICE

Qwest shall not be precluded from collecting surcharges that may be ordered by the Commission to support universal service.

VIII. INTERCONNECTION AND WHOLESALE RATES

A. The pricing of unbundled network elements shall not be affected by provisions of the Plan. Prices for unbundled network elements shall conform to those set by the Commission.

B. Discount percentages applicable to telecommunications services purchased by resellers shall be unaffected by the Plan, but the prices resellers will vary as the prices Qwest charges to its end-user customers for telecommunications services change.

BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF U S WEST COMMUNICATIONS, INC., A COLORADO CORPORATION, FOR A HEARING TO DETERMINE THE EARNINGS OF THE COMPANY, THE FAIR VALUE OF THE COMPANY FOR RATEMAKING PURPOSES, TO FIX A JUST AND REASONABLE RATE OF RETURN THEREON, AND TO APPPROVE RATE SCHEDULES DESIGNED TO DEVELOP SUCH RETURN.	)	**DOCKET NO. T-1051B-99-105** **AFFIDAVIT OF CARL INOUYE**
STATE OF WASHINGTON	) :	**ss**
COUNTY OF KING	)	

Carl Inouye, of lawful age being first duly sworn, depose and states:

1. My name is Carl Inouye. I am Lead Director – Financial Advocacy for Qwest Corporation in Seattle, Washington. I have caused to be filed written testimony and exhibits in support of Qwest in Docket No. T-01051B-99-105

2. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct to the best of my knowledge and belief.

Further affiant sayeth not.

Carl Inouye

Carl Inouye

SUBSCRIBED AND SWORN to before me this 17th day of August, 2000.

ANGIE LEIFER
COMMISSION EXPIRES
NOTARY PUBLIC
8-08-02
STATE OF WASHINGTON

Angie Leifer

Notary Public residing at
Seattle, Washington.

My Commission Expires: 8/8/02

BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF U S WEST COMMUNICATIONS, INC., A COLORADO CORPORATION, FOR A HEARING TO DETERMINE THE EARNINGS OF THE COMPANY, THE FAIR VALUE OF THE COMPANY FOR RATEMAKING PURPOSES, TO FIX A JUST AND REASONABLE RATE OF RETURN THEREON AND TO APPROVE RATE SCHEDULES DESIGNED TO DEVELOP SUCH RETURN	)	DOCKET NO. T-01051B-99-0105

REBUTTAL TESTIMONY OF

GEORGE REDDING

QWEST CORPORATION

AUGUST 21, 2000

REBUTTAL TESTIMONY OF GEORGE REDDING

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SUMMARY OF REBUTTAL TESTIMONY

With the number of adjustments and issues raised in any general rate case, it is easy to become so involved in the details that the primary purpose of the revenue requirement requested is overlooked or ignored. The purpose of any properly adjusted test period is to produce a revenue requirement that will allow the Company the opportunity to achieve the requested rate of return in the future when rates from the proceeding will be in effect.

Qwest has tested the validity of this purpose by overlaying the suggested revenue requirements of the Company and Staff and the deficiency of RUCO on future results based on actual year to date May 2000 results. The revenue requirement developed by the Company will yield almost exactly the requested return, while those of Staff and RUCO miss the mark completely.

My rebuttal testimony then addresses the individual adjustments proposed by Staff, RUCO, AT&T and DOD/FEA. Chief among these is the end of period annualization adjustment. Staff and RUCO spend a great deal of time attempting to show that the Company's adjustments are unreasonable. My response is the same as for the overall revenue requirement; test the adjusted results against the future. I have done this and again show that Staff and RUCO miss the mark.

I then discuss other adjustments, including the proposed treatment of software capitalization, out of period wages, removal of access line sales and image advertising. All of these adjustments are significant and in error for various reasons that I discuss in detail. I also discuss a number of other adjustments and their rationale. Finally, I discuss the adjustments proposed by AT&T and DOD/FEA, which are ill conceived.

After my review of all of the proposals of the other parties, my conclusion remains the same; the Company has an approximate $200M revenue requirement over and above that produced by current operations. My test of this requirement against 2000 results only confirms the appropriateness of this request. With a few exceptions, the adjustments of the other parties should be set aside and the Company position accepted.

IDENTIFICATION OF WITNESS

Q. PLEASE STATE YOUR NAME, TITLE, EMPLOYER AND ADDRESS.

A. My name is George Redding. I am employed by Qwest Corporation as Director-Regulatory Finance. My address is 1801 California, Denver, Colorado.

Q. ARE YOU THE SAME GEORGE REDDING WHO FILED DIRECT AND SUPPLEMENTAL TESTIMONY IN THIS PROCEEDING?

A. Yes, I am.

Q. U S WEST HAS UNDERGONE A NAME CHANGE SINCE YOU LAST FILED TESTIMONY IN THIS PROCEEDING. HOW WILL YOU REFER TO THE FORMER U S WEST IN YOUR REBUTTAL TESTIMONY?

A. The regulated telecommunications subsidiary of Qwest Communications International, Inc. (formerly U S WEST, Inc.) is now Qwest Corporation. Qwest Corporation is the new name of the former U S WEST Communications, Inc. In my testimony I will refer to the former U S WEST Communications, Inc. as Qwest or the Company.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. My rebuttal testimony will clearly show that the positions taken by other parties in this case do not achieve the purpose of a properly constructed test period. Their suggestions of a revenue requirement or deficiency will not allow Qwest to earn the rate of return that they suggest is appropriate in the development of their revenue requirement or deficiency. The fault in their reasoning is their misguided approach to the determination of a revenue requirement through the use of imputations, improper adjustments, overly detailed dissection of the Company's adjustments and losing sight of the purpose of the test period. I will discuss all of these matters.

Q. HOW IS YOUR REBUTTAL ORGANIZED?

A. First, I will review the purpose of an appropriately adjusted test period. Then, I will demonstrate that the suggested revenue requirement proposed by Staff and the deficiency proposed by RUCO will not achieve the purpose of the test period. Then, I will discuss many of the adjustments proposed by Staff and RUCO in detail. Finally, I will rebut the revenue requirement testimony of AT&T witness Gately and DOD witness Lee.

PURPOSE OF THE TEST PERIOD

Q. WHY ARE YOU REVIEWING THE BASIC THEORY OF THE DEVELOPMENT OF THE TEST PERIOD?

A. In the flurry of activity to understand the myriad adjustments and differing views regarding those adjustments, it is easy to overlook the fundamental purpose of the test period and whether the revenue requirement satisfies that purpose. If the test period is properly developed, then the resulting revenue requirement, when applied to the period when rates from the case will be effective, should produce approximately the same rate of return as that found appropriate. I will test for this expected outcome by overlaying the revenue requirements of the Company, Staff and RUCO on that future period when rates would go into effect. However, I think it is first essential to review authoritative literature regarding the purpose of the test period.

Q. WHAT IS THE BASIC REGULATORY THEORY OF THE RATEMAKING PROCESS?

A. In a nutshell, it is the process under rate of return regulation through which the cost of providing service is established to properly set rates for the future. It is <u>prospective</u> in nature. New rates can only be set for the future. The objective is that the rates granted in a case will permit the Company to cover its cost of service in the future and allow an opportunity to earn a fair rate of return in the future.

Q. WHAT ARE THE BASIC FINANCIAL ELEMENTS USED TO DEVELOP A REVENUE REQUIREMENT?

A. As stated, the purpose of the ratemaking process is to set rates for the future. With this in mind, the first, and most important, financial element is the selection of the test year and its development into a test period.

Q. UNDER TRADITIONAL RATE OF RETURN REGULATION, WHAT IS THE PURPOSE OF THE TEST PERIOD?

A. The purpose of the test period is to estimate, to the best extent possible, the conditions that will exist when rates from this proceeding will go into effect.

Q. YOU SAY ESTIMATE. ISN'T THE TEST PERIOD BASED ON ACTUAL RESULTS?

A. Yes, it is. However, since the test period is attempting to simulate conditions that will exist when rates go into effect, it is also a forecast. As so succinctly stated by Hahne & Aliff in their text, Accounting for Public Utilities: "[T]he test period necessarily assumes the posture of a projection of future events when it is used to set future rates."[1] The authors go on to state:

> The idea that historic data express factual conditions has sometimes led to the conclusion that those data are the most reliable data available for estimating future conditions. The factual nature of the events as recorded has apparently imbued the data with a degree of soundness and quality that appears to exceed a forecast approach for test year purposes. When conditions are in a state of change, historic results are likely to be the most unreliable of the sources of test period data as a basis for measuring future rate needs.[2]

[1] Robert L. Hahne & Gregory E. Aliff, Accounting for Public Utilities 7-4 (1995).

In a 1975 article, while serving as Chairman of the New York Public Service Commission, Dr. Alfred Kahn wrote:

> No tradition in public utility regulation is more sanctified than the use of an historic test period. Since the purpose of the exercise is to set rates for the future, the parties try in various ways to adjust the 'test year' experience for later, 'known changes' . . . . The system works moderately well, as long as the period during which the new rates are in effect is not dramatically different from the test period. . . . The fact is . . . regulatory commissions have always been in the business of projecting, whether they knew it or not. When they used historic test year statistics, fully verifiable and verified, graven in stone, as the basis of future rates, they were in fact projecting. They were assuming that the future would be similar to the past. It is no more speculative, then, to make the best possible estimate of future costs when setting future rates; and honesty compels it.[3]

Q. IN ADDITION TO SELECTION OF THE TEST YEAR, WHAT ARE THE OTHER ASPECTS OF CREATING A TEST PERIOD?

A. As stated in the definition of the test period earlier in my testimony, the test year provides the foundation. The next step is to restate the test year data to be reflective of the conditions when new rates are expected to be in effect. This is accomplished through the test period adjustment process.

Q. WHY ARE ADJUSTMENTS SO IMPORTANT?

A. Again I refer to Hahne & Aliff:

> Even in stable conditions, historic data will likely require restatement for actual occurrences not expected to recur or for events that are expected to occur but did not exist (in whole or in part) in the test year.[4]

---

[2] *Id* at 7-5.
[3] Alfred Kahn, *Between Theory and Practice: Reflections of a Neophyte Public Utility Regulator*, Public Utilities Fortnightly 29 (Jan 2, 1975), quoted in Hahne & Aliff, *supra* at 7-3.
[4] *Id.* at 7-7.

1

2 **Q. WHAT TYPES OF ADJUSTMENTS DID YOU MAKE TO THE TEST YEAR**
3 **IN THIS CASE?**

4 A. I made three types of adjustments. They were accounting adjustments,
5 commission adjustments and pro forma adjustments.

6

7 **Q. PLEASE DESCRIBE ACCOUNTING ADJUSTMENTS.**

8 A. Accounting adjustments are entries made during the test year that apply to
9 other periods, or entries made outside the test period which affect the test
10 year. The classic example of an accounting adjustment is a tax true-up,
11 which is booked in one period, but is applicable to a prior period. These
12 adjustments are made to reflect the test period as it would have been in a
13 perfect world. Due to Qwest's use of an end of period annualization
14 adjustment of revenues and expenses, there were relatively few of these
15 adjustments that were made outside the normalization and annualization
16 method used in this filing.

17

18 **Q. WHAT ARE COMMISSION ADJUSTMENTS?**

19 A. They are adjustments made by the Commission in prior rate cases.

20

21 **Q. COULD YOU PLEASE TURN TO PRO FORMA ADJUSTMENTS AND**
22 **DESCRIBE THEM?**

A. Certainly. Pro forma adjustments are known and measurable changes that occur either within the test year or outside of it. The purpose of pro forma adjustments is to make the test period more representative of the future when the new rates determined in a proceeding will be in effect. Garfield & Lovejoy in their book Public Utility Economics, have the following to say regarding pro forma adjustments:

> The commission, in making rates, presumably does so for an indefinite period into the future. However, in order to do so, the commission must rely upon the record of costs of service in a 'test period' . . . which is usually the latest 12 months for which there are complete data. Consequently, future rates are made on the basis of past costs. Of course, 'known changes' - occurring after the test period - usually are taken into consideration by commissions in order to make the test year data as representative as possible of the cost situation that is apt to prevail in the future.[5]

Other authors, such as Hahne & Aliff, make similar points regarding pro forma adjustments. For example, they state:

> For many years, regulators relied primarily upon historic test year data with proforma adjustments to recognize known and measurable changes in the events as recorded . . . . They have recognized that test period data must be structured to accommodate the future, because the future will not develop to accommodate test period assumptions.[6]

Charles Phillips adds:

> Philosophically, the strict test year assumes the past relationship among revenues, costs, and net investment during the test year will continue into the future. To the extent that these relationships are not constant, the actual rate of return earned by a utility may be quite different from the rate allowed by the commission. For many years, commissions have adjusted

[5] *Id.* at 45-46.
[6] Hahne & Aliff, *supra* at 7-4.

test-year data for "known changes:", i.e., a change that actually took place during or after the test period.[7]

Q. DO THE PRO FORMA ADJUSTMENTS REFLECTED BY QWEST FOLLOW THESE GUIDELINES?

A. Yes, they do. And, as I will demonstrate in my next section, the adjustments to the test year chosen by Qwest will allow the test period to fulfill its purpose.

THE FAILURE OF STAFF AND RUCO TO ACHIEVE THE PURPOSE OF THE TEST PERIOD

Q. WHAT WILL YOU ADDRESS IN THIS SECTION?

A. I will test the revenue requirements set forth by the Company and Staff and the deficiency set forth by RUCO against 2000 actual results to see if they fulfill the purpose of a properly adjusted test period. Again, if these revenue requirements were properly developed they should allow the Company an adequate rate of return when overlaid on 2000 actual results.

Q. HOW WILL YOU CONDUCT YOUR TEST?

A. I have received 2000 actual intrastate results through May. I will test the adequacy of the revenue requirements by adding the net operating income

[7] Charles F. Phillips, Jr., The Regulation of Public Utilities 182 (1985)

value of the parties' revenue requirement/deficiency to the year to date May 2000 results which I have annualized. If the recommended revenue requirement is adequate it should produce a return on investment similar to the return being advocated by the parties.

Results of the test are as follows:

$(000)	Qwest	Staff	RUCO
Net Operating Income (NOI) (YTD May 2000 Annualized)	$61,973	$61,973	$61,973
NOI Value of Revenue Requirement/Deficiency	117,976	4,261	(16,490)
Adjusted NOI	$179,949	$66,234	$45,483
Avg. Net Investment (May 2000)	$1,630,392	$1,630,392	$1,630,392
Return on Avg. Net Investment	11.04%	4.06%	2.79%
Recommended Rate of Return	10.86%	9.68%	9.51%

As the above charts show, the proposed effective net operating income proposed by Staff and RUCO would completely miss the mark of approximating the conditions that will be in effect when rates from this proceeding would go into effect. They will not provide sufficient revenues to generate the required rate of return.

Q. WHAT CONCLUSIONS DO YOU DRAW FROM THIS COMPARISON?

A. The Net Operating Income shown above demonstrates clearly that the Company needs the opportunity to achieve the full revenue requirement from

its filing to earn at adequate levels. Without any relief the Company is currently earning only a 3.8% return on its average net investment, which is inadequate. The revenue requirement proposed by Staff and RUCO's deficiency will clearly not bring the Company up to reasonable levels. If inadequate opportunity to achieve adequate levels of additional revenues are granted in this case, the Company will have to evaluate all of its options, including the possibility of another case. However, as the chart above demonstrates, this situation can be put to rest in this case by granting the opportunity to achieve additional revenues close to the Company's request.

DISCUSSION OF INDIVIDUAL ADJUSTMENTS

A. OVERVIEW

Q. HOW WILL YOU ORGANIZE YOUR DISCUSSION OF THE INDIVIDUAL ADJUSTMENTS?

A. I will first discuss the adjustments proposed by Staff and RUCO. Unlike DOD/FEA and AT&T, they engaged in a fairly rigorous development of a revenue requirement or deficiency. DOD/FEA and AT&T used a much more generalized approach which should be accorded less weight than Staff & RUCO.

Q. WILL YOU ADDRESS ALL OF THE FINANCIAL ADJUSTMENTS?

A. No. Ms. Ann Koehler-Christensen will address directory imputation. Mr. Dennis Wu will address depreciation issues. Mr. Phil Grate will address the pension asset and incentive compensation. I will address all remaining financial areas.

B. STAFF & RUCO

END OF PERIOD ANNUALIZATION

Q. WHAT IS YOUR OVERALL REACTION TO STAFF'S AND RUCO'S COMMENTS REGARDING THE COMPANY'S END-OF-PERIOD ANNUALIZATION METHODOLOGY?

A. My general reaction is that Staff and RUCO witnesses do not accurately portray the thoroughness of the Company's method and seem to avoid describing the multiple steps included in the method in an understandable manner. While these witnesses do eventually get around to acknowledging each of the steps at varying places in their testimony, they fail to describe the complete methodology employed by Qwest in any coherent, concise manner. Even an informed reader could misinterpret the Company's end-of-period methodology by reading only the statements of Staff and RUCO.

Q. COULD YOU PLEASE REVIEW THE PURPOSE OF AN END OF PERIOD ANNUALIZATION ADJUSTMENT?

A. The purpose is to remove some of the lag inherent in the use of a historic test year by, in essence, moving the historic test year forward by six months. Another purpose, in Arizona specifically, is to synchronize the test year. The rate base, due to the "fair value" requirement, is necessarily an end of period rate base. The end of period adjustment proposed by Qwest brings the revenues, expenses and taxes into line with the rate base.

Q. WOULD YOU PLEASE REVIEW THE COMPANY'S METHODOLOGY IN A SUMMARY MANNER?

A. Certainly. First, the Company's adjustment was not simple. As described below, it took a great deal of time and analysis.

The adjustment was performed in several steps. I will outline them again here:

- December results, by income statement line item, were first reviewed for any out of period, one time or other adjustments that would make the month of December abnormal. These items were then removed. In simple terms, December was adjusted to reflect normal recurring operating results.

- The normalized December, again by line item, was compared to the trend of that line item over the period of October 1999 to February 2000. If the normalized December results were out of line with this trend, then a trended value for that line item was developed and substituted for the normalized December.

- Finally, either the normalized December or the trended value was then multiplied by twelve to achieve an annualized result.

1

2 **Q. PLEASE ADDRESS THE END OF PERIOD ANNUALIZATION AND THE**
3 **COMMENTS MADE BY MR. BROSCH, MR. CARVER, MR. LARKIN AND**
4 **MR. SMITH.**

5

6 A. Certainly. Mr. Smith of RUCO removes the non-labor expense annualization
7 with only a comment that it is not consistent with past Commission practice.
8 Mr. Larkin, Mr. Brosch and Mr. Carver attempt to discredit the methodology
9 used by the Company by glossing over the annualizations as merely taking
10 the last month in the test year times twelve.

11

12 Both Mr. Brosch and Mr. Carver used phrases like "indiscriminate
13 multiplication" (Brosch page 11) and "global end-of-period annualization"
14 (Carver page 9) to mischaracterize the thoroughness of the Company's end-
15 of-period annualization methodology.

16

17 However, both Mr. Carver and Mr. Brosch then acknowledge later in their
18 arguments that Qwest's method of annualization does indeed involve more
19 than a simple multiplication of December results times twelve.

20

21 **Q. SEVERAL OF THE OPPOSING WITNESSES, MOST NOTABLY MR.**
22 **BROSCH AND MR. CARVER, IMPLY OR DIRECTLY STATE THAT**

1 **QWEST'S ADJUSTMENT WAS PERFORMED AT TOO HIGH A LEVEL.**
2 **HOW DO YOU ANSWER THAT CRITICISM?**
3 A. An end of period annualization, by necessity, is an estimate. Estimates are
4 not made more meaningful or accurate by being more "detailed" or "precise".
5 In fact, the opposite can hold true. By digging into the detail it is easy to
6 obfuscate the main purpose of estimating a reasonable test year revenue
7 requirement. This fogging of the main point of the annualization adjustment
8 by picking and choosing what to annualize and what to leave at average test
9 year levels is exactly what has happened here.
10
11 Further, this picking and choosing destroys the synchronization of the test
12 period. The Company, to the extent practicable, brought all elements of the
13 test year into synchronization at end of period levels. Proper synchronization
14 requires that all elements be stated on the same basis.
15
16 Finally, Qwest is not asking the Commission to just "trust us" that our
17 annualizations are appropriate. I will compare the Company's annualizations
18 side by side with the results of Staff and RUCO against the level of actual
19 results for the year 2000. This is the true test of the adjusted test period
20 levels of revenues and expenses.
21

Q. ON PAGES 11 TO 28 OF HIS TESTIMONY, MR. CARVER SEEMS TO BE ATTEMPTING TO MAKE SOME FORM OF COMPARISON OF THE COMPANY'S ADJUSTED RESULTS WITH ACTUAL REVENUES AND EXPENSES. DO YOU AGREE WITH HIS CONCLUSIONS?

A. No, I do not. First, Mr. Carver has made an apples and oranges comparison between the historic, recorded results of operations and the Company's estimated, end-of-period proforma level for the test year. Obviously, the adjustments to the test year are not included in the historical results. As I just mentioned, a more appropriate way to measure the reasonableness of adjusted test year results is to compare them with the future. Such a comparison will show the Company's adjusted results to be reasonable and clearly demonstrates that drawing conclusions by comparing pro forma adjusted results with historical results is misleading and inappropriate.

Q. HAVE YOU PREPARED COMPARISONS FROM WHIICH THE COMMISSION CAN DRAW APPROPRIATE CONCLUSIONS ABOUT THE TEST YEAR ESTIMATES FOR INTRASTATE REVENUES AND EXPENSES?

A. Yes. My Rebuttal Exhibits GAR-R1, R2 and R3 show graphical representations of Revenues, Expenses Other than Depreciation and Depreciation, respectively. These charts reflect the historical monthly results from January 1997 through May 2000. Each chart also shows a trend of the

actual results. Finally, the Company's, Staff's and RUCO's pro forma levels for each item have been superimposed upon the actual results. I have excluded deregulated results, directory imputations and all adjustments by the Company, Staff and RUCO related to the exchanges to be sold from these comparisons. The deregulated results were excluded as all parties have proposed adjustments that will negate to some degree the impacts of these results. I have excluded directory imputations as these adjustments are not included in actual results. Finally, I excluded the exchange sale adjustments as these results are still included in actual results at this time. With these three adjustments, the actual results and the pro forma adjusted results of the Company, Staff and RUCO are on a comparable basis.

These charts clearly show that the Company's advocacy to bring all elements of revenue and expense to end of period levels is more representative of future conditions than either Staff's or RUCO's. As to Revenues, Rebuttal Exhibit GAR-R1 shows that Qwest, Staff and RUCO are all very close with the exception of directory imputation, which was excluded for this chart. Although different rates are used, the Company and Staff are quite close on the total amount of Depreciation (Rebuttal Exhibit GAR-R3) included in the revenue requirement. These graphs demonstrate that the Company's method, which was done at an overall level is not improved by digging around in the details.

1

2 Where the comparison between the parties really falls apart is on Expenses
3 Other Than Depreciation (Rebuttal Exhibit GAR-R2). There, Staff's and
4 RUCO's recommended expense levels are significantly below actual levels
5 currently being incurred. This is why their suggested revenue requirements
6 are sorely deficient as demonstrated on my test of the revenue requirements
7 in Section I of my rebuttal testimony. It is difficult to understand how Mr.
8 Carver can make the statement on page 20 of his testimony that, "...it is
9 notable that even dramatic post-test year increases in intrastate operating
10 expenses do not reach the extraordinarily high proforma level included in
11 USWC's proposed revenue requirement." My Exhibits demonstrate just the
12 opposite.

13

14 **Q. BOTH STAFF AND RUCO POINT OUT INSTANCES WHERE CERTAIN**
15 **INDIVIDUAL ITEMS AT A LOWER THAN INCOME STATEMENT LINE**
16 **ITEM LEVEL MAY NOT BE REPRESENTATIVE. HOW DO YOU REPLY**
17 **TO THESE COMMENTS?**

18 A. My answer is to look at the results shown on my Rebuttal Exhibits GAR-R1,
19 R2 and R3. The method the Company employed did not, and need not, have
20 looked at the sub-account level of each income statement line item. This is
21 because the Company method focused on estimating end of period cost
22 levels at the line item level of detail and included normalizing adjustments for

unusual events and trending. To cite some examples, the Company made normalizing adjustments to December 1999 specifically for both product and brand advertising. Additionally, the Company performed a trending adjustment to normalized December 1999 to further reduce Corporate Operations expense to the trend at year end. The mere fact that Staff and RUCO do not like the Company's method does not make it wrong. The real test is to evaluate the results as shown on my Exhibits. These results validate the Company's methodology.

Q. PLEASE SUMMARIZE YOUR CONCLUSIONS RELATED TO THE END OF PERIOD ANNUALIZATIONS.

A. The end of period annualization proposed by Qwest is appropriate, viable and produces results that are comparable to the levels actually being incurred by the Company in 2000. The Company's adjustment, therefore, is a major element in fulfilling the purpose of a test period. The Commissions should accept Qwest's annualization adjustments.

SOFTWARE CAPITALIZATION

Q. WHAT IS THE STAFF'S AND RUCO'S PROPOSED ADJUSTMENT RELATED TO SOFTWARE CAPITALIZATION?

A. In this adjustment, both Staff and RUCO recommend adoption of Statement of Position (SOP) 98-1, "Accounting for the Costs of Computer Software

1 Developed or Obtained for Internal Use," for Arizona intrastate ratemaking
2 purposes.
3
4 **Q. DO YOU AGREE WITH THIS ADVOCACY?**
5 A. No, I do not. As I stated in the responses to several Interrogatories, most
6 notably UTI13-021, it makes no sense to adopt this particular change for
7 ratemaking under rate of return regulation. The FCC adoption had no impact
8 on interstate rates because interstate services are price cap regulated.[8] The
9 most compelling reason for not adopting this change for intrastate ratemaking
10 purposes is that there is no change in cash flows coupled with the short lives.
11
12 **Q. PLEASE EXPLAIN FURTHER.**
13 A. This accounting change is fairly unique among accounting changes due to the
14 short life - in this case five years. The Company has, in the past, asked for
15 state adoption of a number of accounting changes. They were detailed by
16 Mr. Carver at page 63 of his testimony. Those changes had a much longer
17 lives, ranging from 7 years to 20 years.
18

[8] In the FCC order, at para. 45, footnote 13, "Joint petitioners [Bell Atlantic and BellSouth] claim that good cause exists for the grant of a waiver [of the requirement to provide a revenue requirement study] because the Commission has modified the price cap rules to exclude exogenous treatment for accounting changes that have no cash flow impact. Therefore, because the accounting change has no impact on rates, a revenue requirement study would serve no useful purpose." [Report and Order in CC Docket No. 98-81, Order on Reconsideration in CC Docket No. 96-14150, Fourth Memorandum Opinion and Order in AAD File No. 98-43, Adopted May 18, 1999 and released June 30, 1999]

This change, on the other hand, produces huge swings in revenue requirement over a very short time frame. If it were to be adopted for ratemaking purposes today, the Company would have to come back in a very short timeframe to recover the revenue requirement shortfall. However, that would be inconsistent with the Staff testimony of Mr. Shooshan, who is recommending adoption of price cap regulation with an initial term of five years. If his recommendations are adopted, it would make recovery of the shortfall produced by this adjustment impossible.

Q. SO WHAT IS THE BEST SOLUTION?

A. The best solution is to ignore this accounting change for ratemaking purposes.

Q. WHY IS THAT?

A. When an accounting change occurs, there is often an initial "shock" to the revenue requirement, followed by a move toward a stable condition as the accounting process reflects more and more business in the "new" manner. In the first year of this accounting change, at a total company level, Qwest realized approximately $420M in reduced software expense, which is accounted for as an intangible asset under the new rules. Using the same information source as Mr. Carver (the response to UTI request 64-4S1) and the same assumptions of a 5-year amortization period, the amortization of

that asset amounts to only $42M in the first year. The net cost reduction of over $375M ($420M-$42M) reduces revenue requirement significantly. Then, in the second year, the company expects to capitalize an additional $511M, and the amortization rises to approximately $180M. This continues until the fifth year, when the ongoing expense level catches up to the expense level prior to capitalization, and the revenue requirement associated with the change becomes stable. However, because there is now a stable new *incremental* element of rate base, the revenue requirement actually rises above the level that prevailed before the accounting change, because of the return on the investment. This calculation is shown on Exhibit GAR-R4.

Q. WHAT HAS MR. CARVER DONE?

A. He has taken the first year impact, which is now behind us, and uses that level of expense as if it were permanent to arrive at his adjustment. This means that he has taken the year of the maximum change and proposes to embed that maximum change into the revenue requirement. He has also ignored the fact that this accounting change, by itself, is not cash impacting. Finally, he has completely ignored the fact that the financial impact of this change will dissipate rapidly.

Q. PLEASE ELABORATE.

1 A. Certainly. The first point is that Qwest still has to pay for the programming
2 work or software purchases, regardless of accounting treatment. Mr. Carver's
3 adjustment takes away the cash to pay for these costs, forcing the Company
4 to get it from other sources. This reduction in cash flow also decreases the
5 Company's incentive to provide capital investment.
6
7 The next point I would like to address is the non-cash nature of the
8 accounting change. Mr. Carver has completely ignored this reality in his
9 adjustment. He has proposed to make an otherwise non-cash impacting
10 adjustment reduce cash by adopting this accounting change for regulatory
11 purposes. To make the situation worse, he fails to make an adjustment to
12 cash working capital, which would recognize the increase to cash
13 requirements of his proposed adjustment.
14
15 **Q. YOU MENTIONED THAT MR. CARVER'S ADJUSTMENT WILL MAKE THE**
16 **FIRST YEAR IMPACT PERMANENT, AND THAT, IF A PRICE CAP PLAN**
17 **WERE ADOPTED, QWEST WILL NOT HAVE THE OPPORTUNITY TO**
18 **RECOVER THE IMPACTS OF THIS ACCOUNTING CHANGE WHEN IT**
19 **TURNS AROUND. IS THERE AN ALTERNATIVE?**
20 A. Yes. If the Commission is to adopt this adjustment it should also provide an
21 automatic rider to reflect the revenue requirement change that will occur over
22 the next five years if this accounting change is adopted.

Q. PLEASE EXPLAIN.

A. The revenue requirement impact of this accounting change over the next several years is as follows:

1999	$(36)
2000	(31)
2001	(14)
2002	(1)
2003	11
2004	13

This means that a $(36)M decrease in year one should be followed by an automatic increase of $5M in year two, $17M in year three, $13M in year four, $12M in year five and a final increase of $2M in year six. These automatic rider adjustments would make the Company whole as the revenue requirement impact of the software capitalization changes in the future.

Q. IS THERE PRECEDENT FOR A RATE RIDER SUCH AS THIS?

A. Yes. In 1996 the Arizona Court of Appeals decided that Qwest was entitled to certain additional revenues resulting from the decision of the Company's rate case in Docket No. E-1051-93-183. Qwest was granted a rate rider in 1997 to recover the refund portion of the decision. This rider continued until 1999 when the entirety of the refund had been collected.

Q. IS A RIDER THE BEST OPTION?

1 A. No, it is not. The best option is the one set forth by the Company, namely,
2 not to adopt this accounting change for ratemaking purposes. Adoption of
3 this accounting change for ratemaking purposes will cause rate shock of its
4 own. Customers will be delighted with the first year decrease, but will be less
5 enthusiastic about the yearly increases that would follow and the permanent
6 rate level that will be higher than if the Commission ignored the accounting
7 change. In total those increases would total $49M to enable the customers to
8 enjoy a first year decrease of $(36)M.
9
10 **Q. WOULD THE COMMISSION HAVE TO ADOPT THE AUTOMATIC**
11 **INCREASES?**
12 A. Yes, it would. If this change is adopted for ratemaking purposes and the
13 Commission adopts a price cap plan, the revenue requirement will
14 automatically increase each year by the mechanics of the change itself. In
15 other words, the future impacts will occur without any action by the Company.
16 Since adoption of a price cap plan would end rate of return regulation, at least
17 for the term of the plan, the Company could never recover these future cost
18 increases without an automatic rider. Coincidentally, the term of the
19 proposed price cap plan exactly parallels the period when the future cost
20 increases would occur. To fail to provide for these future increases would not
21 only be one sided, it would be confiscatory, as the changes will occur without
22 action on the Company's part. As I stated earlier, the best solution is for the

Commission to ignore Mr. Carver's adjustment and not adopt this accounting change for ratemaking purposes.

Q. IS RUCO'S PROPOSED ADJUSTMENT ANY BETTER?

A. No, it is not. While it does average the impact of the first three years, it suffers from the same infirmities of Staff's proposed adjustment. It would still require a future rate case or, if a price cap plan is adopted, an automatic recovery mechanism to make the Company whole. It would still create a large revenue requirement swing over a short period of time. It would still take away, at least in the early years, valuable cash flow that the Company needs for investment. My recommendation to the Commission is still the same; do not adopt this accounting change for regulatory purposes. This achieves the best result for both the Company and its customers.

POST TEST YEAR WAGE & SALARY INCREASES

Q. WHO IS PROPOSING AN ADJUSTMENT TO ELIMINATE POST TEST YEAR WAGE INCREASES?

A. Only Mr. Carver for Staff proposes elimination of the post test year wage and salary adjustments. Mr. Larkin of RUCO also makes adjustments to the post test year wage and salary adjustments, but he does not eliminate them.

1 **Q. DO YOU AGREE WITH ANY OF THESE ADJUSTMENTS?**

2 A. Yes. Mr. Larkin is correct in his adjustment to the occupational wage
3 increase effective in August 2000. The Company applied an incorrect factor
4 for this wage increase. The factor should have been 3.5% instead of the
5 4.02% used in the original calculation.
6
7 **Q. MR. CARVER OF STAFF PROPOSES TO ELIMINATE ALL POST TEST**
8 **YEAR INCREASES ON THE BASIS THAT ONLY WAGE AND SALARY**
9 **CHANGES WITHIN THE HISTORICAL TEST YEAR SHOULD BE**
10 **RECOGNIZED. DO YOU AGREE?**
11 A. Absolutely not. First, it has been the policy of this Commission in the past to
12 recognize out of period wage and salary changes. They were recognized in
13 the last case, albeit with an offset for falling employee levels at that time.
14 That same condition does not prevail now. Based on past practice, the full
15 out of period increases should be allowed. Furthermore, the Staff is
16 inconsistent on the point of reaching out beyond the test year. They
17 appropriately go outside of the test year with regard to the access line sales.
18 While I do not agree with their adjustment, I do agree with addressing the
19 subject matter of the access line sales, which is outside the test year.
20
21 **Q. HAVEN'T THESE INCREASES ALREADY TAKEN EFFECT?**

A. Yes, they have. Mr. Carver acknowledges as much on page 66 of his testimony. However, he then goes on to make the incredible statement that "[i]n a sense, the update of the test year from June 1998 to calendar year 1999 is an exercise encompassing an 18 month known and measurable period update."

Nothing could be farther from reality. When an entire test year is updated based on actual results, that is not what is traditionally recognized as a known and measurable change. This is pure obfuscation on Mr. Carver's part. A "known and measurable change" is one that occurs within or outside of the test year that is the basis for a pro forma adjustment. Normal examples are wage and salary changes, rate changes, tax rate changes, etc.

Q. ARE OUT OF PERIOD CHANGES APPROPRIATE?

A. Yes they are. In fact, Mr. Carver is inconsistent with another Staff witness, namely Mr. Brosch, when he claims that Staff has made no out of period adjustments. The access line sale is not yet completed as of the date of this rebuttal. Clearly, any adjustment for this sale is outside the test period. Yet, all parties acknowledge that an adjustment for this item should be made to produce a properly adjusted test year.

1 **Q. MR. CARVER WOULD HAVE ONE BELIEVE THAT NO ADJUSTMENT**
2 **BASED ON CHANGES OUTSIDE OF THE TEST YEAR IS WARRANTED.**
3 **IS THAT CORRECT?**
4 A. No, it is not. In a current New Mexico case, Mr. Carver contradicted his own
5 position wherein he quoted *The Regulation of Public Utilities*, page 196 in an
6 interrogatory response which stated in part "... commissions have adjusted
7 test-year data for 'known changes'; that is, a change that actually took place
8 *during or after* the test period (such as a new wage agreement ....)"
9 (emphasis added). Other scholars, such as Garfield & Lovejoy in their book
10 Public Utility Economics, state that "[o]f course, 'known changes' - occurring
11 after the test period - usually are taken into consideration by commissions in
12 order to make the test year data as representative as possible of the cost
13 situation that is apt to prevail in the future." Both of these quotes merely
14 restate the primary purpose of a test period – to be as representative as
15 possible of the period when new rates will be in effect.
16
17 **Q. DO OUT OF PERIOD WAGE AND SALARY ADJUSTMENTS QUALIFY AS**
18 **KNOWN AND MEASURABLE CHANGES?**
19 A. They certainly do. They are known (the date of the increase is certain) and
20 they are measurable (both increases have already taken effect).
21

Q. MR. CARVER'S OTHER POINT IS THAT QWEST MADE NO ADJUSTMENTS FOR ITMES SUCH AS "GROWTH IN REVENUE LEVELS" ON PAGE 65 OF HIS TESTIMONY. IS HE CORRECT?

A. This comment makes it clear that Mr. Carver has an improper conception of the test period. While it is true that the Company, and to some degree Staff and RUCO, have adjusted the test period for volume levels, none of the parties adjusted for volume level changes outside of the test year. Volumes can be adjusted outside of a historic test period, but then the test year becomes a forecasted test year. This is not an improper method for ratemaking purposes, but Arizona has traditionally used a historic test year. All parties have presented their recommendations using a historic test year.

Under the historic test year concept, volume adjustments are not made outside the confines of that historic period, but price level changes are. That is exactly what Public Utility Economics and Garfield & Lovejoy meant in the earlier quotes. Qwest has made such price level changes outside the test year for known and measurable changes such as the wage and salary increases.

Had there been rate changes, or other changes in price levels that occurred outside the test year, the Company would have included them. It is the Company's practice to scan the period outside the test year and include any

price level changes that meet the known and measurable test. In this case, the only changes meeting the test were the wage and salary increases.

Q. WHAT IS THE PURPOSE OF MAINTAINING TEST YEAR VOLUMES?

A. Whether the test year volumes are stated at average or end of period levels, the purpose of maintaining test year volume levels is to maintain the relationship among revenues, expenses, taxes and investment. The out of period wage and salary adjustments are stated on the same volume basis as the in period wage and salary adjustments so that this relationship is maintained.

Q. PLEASE SUMMARIZE YOUR POSITION RELATING TO OUT OF PERIOD WAGE AND SALARY ADJUSTMENTS.

A. The out of period wage and salary adjustments are known and measurable changes that should be recognized. The rate increase error pointed out by Mr. Larkin should be corrected. The adjustments have been stated at test year volume levels to maintain the proper relationship among test period revenues, expenses, taxes and investment. Consistent with the past practice of this Commission, these adjustments should be allowed.

ACCESS LINE SALES

Q. BOTH STAFF AND RUCO ADDRESS VARIOUS ISSUES RELATED TO THE COMPANY'S PROPOSED SALE OF ACCESS LINES IN ARIZONA. WHAT ARE YOUR COMMENTS?

A. Qwest's filing removed the revenues, expenses, taxes and investment related to the access lines to be sold. The basis used to develop the financial quantification for this removal was the same as the financial presentation used in the actual sale transaction. As stated in several interrogatories, such as UTI 51-003 & 004 and UTI48-015, this basis was reviewed and approved by the Company's independent auditors.

Mr. Brosch of Staff and Mr. Smith of RUCO both propose further adjustments to the sale of access lines. I would like to address Mr. Smith's adjustment first.

Q. PLEASE PROCEED.

A. Qwest has appropriately removed the revenues, expenses, taxes and investment related to the proposed sale. Both Mr. Smith and Mr. Brosch acknowledge that these revenues and costs should be removed. However, Mr. Smith proposes to inappropriately address the disposition of the gain in this case rather than in the access line sale docket. Testimony related to the gain has been and is being presented in the access line sale docket and that

is where the disposition of the gain should be decided. There has been no testimony, other than Mr. Smith's brief discussion, on the disposition of the gain in this case. The disposition of the gain should remain in the access line sale docket and be decided there.

Q. MR. BROSCH ONLY DISPUTES THE METHODOLOGY OF HOW MUCH REVENUE AND COST RELATED TO THE ACTUAL OPERATIONS OF THE EXCHANGES TO BE SOLD SHOULD BE REMOVED. ISN'T THAT CORRECT?

A. Yes, it is. I disagree with his adjustments and would like to address each of them.

Q. PLEASE PROCEED.

A. His first adjustment is to allocate corporate operations expense to the costs to be removed. The adjustment for sale of exchanges should reflect reality rather than guesses or wishful thinking by Mr. Brosch. Per Qwest's Financial Planning and Analysis (FP&A) organization there are no budgeted reductions for corporate operations expense associated with the sale of exchanges. The bottom line is that Qwest will not have reductions in corporate operations expenses as a result of exchange sales.

Q. ARE THERE OTHER REASONS THAT NO CORPORATE OPERATIONS EXPENSE SHOULD BE ALLOCATED TO THE REMOVAL OF COSTS RELATED TO THE PROPOSED SALE?

A. Yes, there are. Arizona is one of Qwest's fastest growing states. Average annual growth in access lines exceeds the number of access lines that Qwest is selling in Arizona. During the regulatory approval process Qwest will have added more new lines than were sold to Citizens. Taking into account growth and all other factors, Arizona will have a higher corporate prorate factor in the future even with the exchange sales.

Mr. Brosch characterizes his proposed 1% corporate operations expense cut as conservative. Qwest characterizes his proposal as unrealistic. Mr. Brosch talks in generalities about cutting corporate operations expenses, but does not offer any specific reasoning or support for his statement.

Q. WHAT IS MR. BROSCH'S NEXT ADJUSTMENT?

A. Mr. Brosch made a pro rata assignment of marketing costs to the exchanges being sold based on relative revenues. By contrast, Qwest assigned marketing costs to those exchanges in the context of where and how its marketing dollars are actually spent. It is fact that Qwest does very little marketing in the exchanges offered for sale. The Company's adjustment reflects reality. There are no marketing people located in the exchanges

1 offered for sale. Qwest's TV, newspaper, and radio media buys are heavily
2 concentrated in the metropolitan areas. Mr. Brosch does not offer any
3 evidence that Qwest's marketing efforts in the exchanges being sold is at the
4 same level as the exchanges in the rest of the state.
5
6 The Company's adjustment to the marketing expense allocator was not
7 arbitrary. USWC did a high level analysis of advertising expenditures in 1997
8 and 1998 and found that approximately 45% of expenditures were for
9 campaigns primarily directed at urban areas, while the remainder could
10 potentially reach both urban and rural areas. The methodology utilized was
11 reviewed and accepted by Arthur Andersen, Qwest's independent outside
12 auditors.
13
14 **Q. DOESN'T MR. BROSCH ALSO MAKE AN ADJUSTMENT RELATED TO**
15 **DEPRECIATION?**
16 A. Yes, he does.
17
18 **Q. DOES THE COMPANY AGREE WITH THIS PORTION OF THE**
19 **ADJUSTMENT TO ACCESS LINE SALES?**
20 A. In principle, yes. In fact the Company acknowledged the correctness of such
21 an adjustment in its response to Data Request UTI 52-014. I do not agree

with the rates used by Mr. Carver in his adjustment, but I do agree that an adjustment should be made.

IMAGE, OLYMPIC & SPORTS ADVERTISING

Q. HAVE YOU REVIEWED THE ADJUSTMENTS FOR IMAGE ADVERTISING AND OLYMPIC/SPORTS SPONSORSHIP RECOMMENDED BY STAFF AND RUCO?

A. Yes.

Q. WHAT IS MR. CARVER'S ARGUMENT REGARDING IMAGE ADVERTISING.

A. The heart of Mr. Carver's argument is contained on page 102 of his testimony where he states:

> USWC has not demonstrated that promoting its imagery in a favorable light will influence growth in business or residence access lines or customer decisions to purchase other discretionary services such as call waiting. While individual customers might be receptive to and express awareness of the Company's branding efforts, this type of image building is not cost free and does not directly support the development of new products or promote the sale of specific existing products.

Q. WHAT IS YOUR RESPONSE TO THIS ARGUMENT?

A. Mr. Carver has based his disallowance of image advertising on an incomplete chain of logic. The piece he is missing is that image advertising supports the sale of *all* products. Image and product-specific advertising are

complementary. Image advertising develops awareness of the Company and product-specific advertising then builds on that awareness at the more specific level of individual products. In other words, product-specific advertising is incomplete without the complementary image advertising. And, as competition grows and the public hears more brand names associated with telecommunications, image advertising becomes increasingly important to build the awareness of the company so that the product-specific advertising can effectively promote the various products.

Q. DO YOU HAVE INFORMATION THAT SUPPORTS THE IMPORTANCE OF BRAND OR IMAGE ADVERTISING?

A. Yes, I do. Tom Peters recently published "The Circle of Innovation" and discusses brand advertising in chapter 10. There he states:

> The market is hopelessly crowded. As a result: BRANDING IS MORE--NOT LESS--IMPORTANT THAN EVER ... if you want to stand out ... even a little bit ... in that insanely crowded/ever more crowded marketplace.[9] (emphasis in the original)

He goes on to say,

> No room for new brands? Exactly Wrong! It's the age of message glut ... and never has there been more room for/need for new brands/aggressive branding. Lobbing it [product or service] out there ... even if it's terrific and perfectly homed in on a particular consumer ... ain't going to get you very far. (Sorry.)

[9] "The Circle of Innovation", Tom Peters, Vintage Books, June 1999, page 337.

1 Brand! Brand!! Brand!!! That's the message ... for the late 90s and
2 beyond.[10]
3
4 **Q. WHAT ELSE DOES MR. PETERS SAY ABOUT BRANDING?**
5 A. He continues to reinforce his point that branding is important for about 12
6 pages. The following are a few selected quotes from this section:
7 Branding means nothing more (and nothing less!) than creating a distinct
8 personality ... and telling the world about it ....[11]
9
10 ***Businesses that engage consumers are those*** that afford them a
11 memorable sensory experience ***that ties in with the positioning of the***
12 ***company, product, or service.***[12] (emphasis added)
13
14 **Q. HOW DO YOU RESPOND TO MR. CARVER'S PROPOSED**
15 **DISALLOWANCE OF OLYMPIC AND SPORTS SPONSORSHIP COSTS?**
16 A. Mr. Carver makes the same logic error regarding Olympic and Sports
17 Sponsorship costs as he does with Image Advertising. These are really
18 extensions of image advertising. As the responses to the data requests Mr.
19 Carver cites indicate, there is significant value to the public as well as to the
20 company in incurring these costs. The public sees Olympic sponsors as
21 winners and wants to associate with winners. This advantages the company
22 in the current competitive environment for communications services through

[10] Id. Pg. 337
[11] Id. Pg. 339
[12] Id. Pg. 346 quoting from "Marketing Aesthetics" by Bernd Schmitt and Alex Simonson

1 name recognition that further supports and is integrated with the advertising
2 of specific products.
3
4 **Q. MR. CARVER APPEARS TO INFER THAT QWEST IS SPONSORING THE**
5 **SYDNEY OLYMPIC GAMES. IS IT CORRECT THAT QWEST IS A**
6 **SPONSOR OF THE SYDNEY GAMES?**
7 A. No. Qwest is not a sponsor of the Sydney Olympic Games. The Company is
8 a sponsor of the Salt Lake City Winter Olympics in 2002.
9
10 **Q. MR. CARVER STATES ON PAGE 107 OF HIS TESTIMONY THAT**
11 **"OLYMPIC SPONSORSHIP WILL ENHANCE THE PUBLIC IMAGE OF THE**
12 **COMPANY." WHAT DO YOU CONCLUDE FROM THIS?**
13 A. It appears that Mr. Carver actually supports the Company's contention that
14 image advertising, including sports sponsorships, is a necessary and
15 appropriate expense. However, Mr. Carver still apparently questions
16 ratepayer benefit. Given the material I have presented from Mr. Peters, I
17 believe it is crystal clear that image advertising of all types is essential to the
18 survival, success and profitability of the Company.
19
20 **Q. MR. CARVER STATES THAT THE COMPANY SHOULD BE FREE TO**
21 **ENGAGE IN THIS TYPE OF ADVERTISING BUT THAT THE**

1 **RATEPAYERS SHOULD NOT BE EXPECTED TO FUND THESE COSTS.**
2 **(CARVER AT 108 - 109) HOW DO YOU RESPOND?**
3 A. Mr. Carver is not living in the real world of competition. Every large company
4 I can think of, regardless of industry, engages in image advertising and
5 includes in its price an element of that cost. This is the way the real,
6 competitive world works. Mr. Carver just chooses to ignore it. The Company
7 should be allowed to recover all of its image advertising, Olympic and sports
8 sponsorship costs through the normal ratemaking process.
9
10 **Q. WHAT IS MR. LARKIN'S ARGUMENT ABOUT IMAGE ADVERTISING?**
11 A. Mr. Larkin also proposes to disallow these costs for similar reasons. He, too,
12 does not acknowledge the real world of competition for communications
13 services and discounts the strong linkage between increased sales of
14 regulated services to Arizona consumers and image advertising. To wait
15 until the market for all services is fully competitive before allowing image
16 advertising would be punitive. It is also inconsistent with the real competitive
17 world.
18
19 **Q. WHAT RECOMMENDATION DO YOU HAVE FOR THE COMMISSION?**
20 A. A disallowance for image advertising, including Olympic and sports
21 sponsorships, is no longer appropriate because existing and constantly
22 developing competition throughout the telecommunications market make this

a necessary cost of being successful in the local telephone business. The Staff and RUCO adjustments should be ignored.

DISALLOWANCE OF SERVICE QUALITY COSTS

Q. PLEASE DESCRIBE THE STAFF AND RUCO ADJUSTMENTS.

A. These proposed adjustments remove certain costs of providing service to customers and costs imposed by the Commission for failure to meet service standards, and they further impute revenue to Qwest as if no customer credits had been issued.

Q. ARE THESE ADJUSTMENTS APPROPRIATE?

A. No, they are not. Qwest is the provider of last resort (POLR) for its service territory in Arizona. As the POLR, it is obligated to serve every customer who wishes to have service. This is an obligation not shared or borne by any other provider in Qwest's operating territory in Arizona. Sometimes, the best way to provide service to a customer, when traditional telephone facilities are not in place, is to provide alternative services during an intervening period.

Q. WHAT KINDS OF ALTERNATIVE SERVICES DOES QWEST OFFER?

A. In many areas of Arizona, cellular or PCS wireless services are available. Consistent with Arizona rules, Qwest offers customers whose traditional

telephone service cannot be provided in the time frame requested the alternative of cellular service at Qwest's expense. Qwest charges these costs to operating expenses because they are a reasonable cost of doing business, and because Qwest is indeed providing service to the customer, even if it is not the precise service the customer has requested. Service provided through the cellular voucher program is the largest volume alternative service Qwest provides. Qwest believes this is because it is the best alternative to traditional wireline service, with a quality and cost that are quite similar to traditional service. Other alternative services include paging vouchers, remote call forwarding, and voice messaging, which Qwest also provides at no cost to the customer.

Q. WHAT IS YOUR RECOMMENDATION TO THIS COMMISSION?

A. The Commission should ignore the Staff and RUCO adjustments to remove service quality program costs from regulated results of operations. Qwest is providing service to these customers consistent with Commission orders and agreements, and should be allowed recovery of these reasonable and prudent costs.

CASH WORKING CAPITAL

Q. BOTH STAFF AND RUCO PROPOSE ADJUSTMENTS TO CASH WORKING CAPITAL (CWC). DO YOU AGREE WITH THEM?

A. No, I do not.

Q. WHAT COMMENTS DO YOU HAVE ON MR. SMITH'S CASH WORKING CAPITAL ADJUSTMENT?

A. It is incorrect! It is based on the test year ended June 30, 1998 rather than the updated test year of calendar 1999. I believe it should be disregarded.

Q. MR. BROSCH ALSO ADDRESSES CASH WORKING CAPITAL. DO YOU HAVE ANY COMMENTS OR CONCERNS ABOUT HIS TREATMENT OF THIS ISSUE?

A. Yes, I do. Mr. Brosch correctly notes that the Company's computed CWC requirement based on as-filed amounts is ($46.2M). Thus, of his $9.5M adjustment, $7.0M is to correct an incorrect posting in the company's filing, which the Company acknowledged in response to Data Request RUCO 28-007.

Q. WHAT MAKES UP THE REMAINING $2.5M OF MR. BROSCH'S ADJUSTMENT?

1 A. The remaining difference arises from changes to lag days and to adjusted
2 revenue and expense levels. When the Commission reaches it final decision
3 on allowed revenues and expenses, then the final CWC allowance can be
4 calculated.
5
6 **Q. HAVE YOU ATTEMPTED TO REPLICATE MR. BROSCH'S**
7 **CALCULATIONS?**
8 A. Yes, to no avail. I am unable to replicate his lag day amounts using his
9 asserted changes. Consequently, I am unable to replicate his total results.
10
11 **Q. ARE ANY OF THESE ASSERTED CHANGES IN ERROR?**
12 A. Yes. His adjustment for compensated absence timing is unnecessary since
13 this was already done on worksheet 24 of the basic study. The Company set
14 the lag equal to the revenue lead, thereby negating its impact on the study.
15 I'm not sure where or how he made his adjustment but it wasn't necessary
16 and has now compounded the impact on this element.
17
18 **Q. DID YOU FIND ANY OTHER PROBLEMS IN HIS STUDY?**
19 A. Yes. When he says on page 68 in the last sentence of the first paragraph
20 that "[u]sing the FCC basis lag value for these insurance items also requires
21 elimination of the "Average Benefit Liability" ....", he overlooks the fact that

this liability also includes the liability for the savings plan. The savings plan liability needs to be retained in the calculations.

There is one other item that has no apparent basis. This is in the last paragraph on page 69 where he arbitrarily adds a 0.6 day adjustment to the voucher lag value. There is no indication of how he arrived at this value and I therefore can not agree with it.

Q. DO YOU HAVE ANY FINAL CONCERNS ABOUT MR. BROSCH'S CWC CALCULATIONS?

A. Yes, I do. In his discussion of incentive compensation impacts, he states that he excluded them but does not say how he adjusted the basic study. Based on our review of the study and attempts to incorporate Mr. Brosch's changes into it, we are unable to replicate his results in any reasonable way.

ACCOUNTING ADJUSTMENTS

Q. BOTH RUCO AND STAFF PROPOSE SEVERAL ACCOUNTING ADJUSTMENTS. ARE THEY APPROPRIATE?

A. It depends. One of them, the adjustment relating to prior period income taxes is appropriate under all circumstances. Because of the Company's approach to the end of period adjustment, most adjustments that would normally be

accounting adjustments were accounted for in normalizing the base before annualization, and, therefore, do not need to be separately shown. However, the adjustment for prior period income taxes is appropriate regardless of the approach chosen by the Commission with respect to the end of period annualization adjustment.

Q. WHAT ABOUT THE REMAINING ADJUSTMENTS?

A. If the Company's end of period annualization adjustment that relates to the various other accounting adjustments, such as property taxes and depreciation is not accepted, then these adjustments would be proper. However, if the annualization is accepted, they are not proper, as they were already taken into account in the annualization adjustment itself if they impacted the base to be annualized.

FCC DEREGULATED PRODUCTS

Q. MR. CARVER MAKES TWO ADJUSTMENTS TO THE INCLUSION OF FCC DEREGULATED PRODUCTS IN THE REVENUE REQUIREMENT. DO YOU AGREE WITH HIM?

A. I agree with his financial end result, but not his methodology. Mr. Carver's adjustment is based on the premise that the deregulated products should not cross subsidize regulated products. He therefore makes a revenue

imputation that brings the return on the deregulated products up to the level being recommended in the overall revenue requirement.

I disagree with this portion of his adjustment. If there is concern about the cross subsidization of deregulated products, then the best solution is for this Commission to deregulate the products and remove the financial results from consideration in the revenue requirement. This is what I meant when I said that I agree that Mr. Carver's financial end result would approximate the removal of these products.

Q. HASN'T THE COMPANY HISTORICALLY INCLUDED THESE DEREGULATED RESULTS IN ITS REVENUE REQUIREMENT DETERMINATION?

A. Yes, it has. That has been the precedent. However, Qwest would have no disagreement with removing these items from regulation, thus achieving symmetry with their treatment in the interstate jurisdiction.

BROADBAND CABLE

Q. MR. BROSCH OF STAFF MAKES TWO ADJUSTMENT RELATED TO BROADBAND CABLE. DO YOU DISAGREE WITH THEM?

A. Not particularly. The Company has reviewed Staff's adjustment to the affiliate billing estimates between Qwest and Broadband Services, Inc. (BSI), the broadband affiliate. Given the start-up nature of BSI's operations, the Company does not believe that Mr. Brosch's adjustments to the estimated billing between Qwest and BSI are unreasonable.

Q. WHAT ABOUT THE SECOND ADJUSTMENT RELATED TO THE ASSETS TO BE TRANSFERRED?

A. Mr. Brosch's facts regarding the status of the broadband asset transfer are correct. Pending clarification of the Company's intent with regard to the transfer of the assets, I have no disagreement with his adjustment.

DISALLOWANCE OF HEADQUARTERS COSTS

Q. DOES THE COMPANY AGREE WITH THE HEADQUARTERS DISALLOWANCE MADE BY STAFF?

A. For the most part, it does not. The Company believes that the headquarters' executive functions allocated back to Qwest are distinct functions necessary to any large corporation. Allocation of these costs is usual and normal to the operation of any business. The executives are responsible for structure and organization as well as policy, future direction, and focus for the Company as a whole.

Q. DOES THE COMPANY CONCUR WITH ANY OF THE USWI DISALLOWANCE ADJUSTMENT PROPOSED BY STAFF?

A. Yes. The Company agrees with Staff's assessment of headquarters' foundation costs. All other items associated with the foundation are booked below-the-line and Qwest agrees that the associated executive costs should match the accounting for the other costs.

INTEREST SYNCHRONIZATION

Q. HAVE YOU REVIEWED THE INTEREST SYNCHRONIZATION ADJUSTMENTS MADE BY STAFF AND RUCO?

A. Yes I have. None of the interest synchronization adjustments can be considered final. The interest synchronization adjustment must be re-calculated once all adjustments affecting rate base, including the elements thereof, are finalized in this case and accepted by the Commission.

RECIPROCAL COMPENSATION

Q. MR. BROSCH PROPOSES TO REVERSE THE COMPANY'S PROPOSAL FOR A RIDER RELATED TO RECIPROCAL COMPENSATION. DO YOU AGREE WITH HIS POSITION?

A. No, I do not. While Mr. Brosch does agree that the Company should at least recover the test year level of reciprocal compensation, he makes no provision for the future. This item is very volatile and can increase or decrease rapidly. The main concern, which has yet to be fully decided by the courts and regulatory bodies, is the compensation, if any, for the transport of internet traffic. With internet growth at its current levels, reciprocal compensation could grow to extremely high levels in a very short timeframe. This is why the Company proposed its automatic rider. The rider protects all parties, regardless of whether the cost increases or decreases.

EMPLOYEE CONCESSIONS

Q. WHAT IS YOUR OPINION REGARDING STAFF'S ADJUSTMENT RELATED TO A DISALLOWANCE OF A PORTION OF EMPLOYEE/RETIREE CONCESSIONS?

A. This is an entirely unnecessary and inappropriate adjustment.

Q. WHY DO YOU SAY THAT?

A. Staff's argument in support of this adjustment is that USWC should have allocated a portion of the value of the employee/retiree discount to the interstate jurisdiction. This is inappropriate because USWC can only discount its intrastate intraLATA services to its employees and retirees. As a result,

1 the only discounts awarded to employees and retirees are for basic local
2 service, certain discretionary local services, and local long distance services.
3
4 **Q. STAFF'S WITNESS MR. BROSCH STATES THAT HE MERELY WISHES**
5 **TO SPREAD THE COST OF THIS EMPLOYEE BENEFIT ACROSS**
6 **REGULATORY JURISDICTIONS, JUST LIKE OTHER EMPLOYEE-**
7 **RELATED COSTS. WHAT IS WRONG WITH THIS INTENT?**
8 A. Mr. Brosch's argument is superficially plausible. However, Mr. Brosch fails to
9 point out that assignment of a portion of these costs to the interstate
10 jurisdiction is a disallowance of these costs more akin to a penalty. QWEST
11 can recover none of the cost of Mr. Brosch's imputation of revenues to the
12 interstate jurisdiction because the separations procedures do not allow any
13 portion of the revenue upon which the discount is given to be allocated to the
14 interstate jurisdiction. Consequently, Mr. Brosch is really proposing to
15 penalize the Company by disallowing recovery of a perfectly legitimate, long-
16 standing and long-accepted employee benefit.
17
18
19 **C. AT&T & DOD/FEA**
20 **Q. WHO ADDRESSES REVENUE REQUIREMENTS FOR AT&T?**
21 A. Ms. Susan Gately. She proposes a number of adjustments. I am in complete
22 disagreement with all of them.

1

2 **Q. PLEASE ADDRESS THEM.**

3 A. Her first adjustment relates to Local Number Portability (LNP). She claims
4 that there are elements of revenue, expense, taxes and investment that are
5 being recovered under the FCC surcharge that are included in the Company's
6 test year. This is completely unfounded. During the last half of the year, the
7 elements covered by the surcharge were ordered to be removed from the
8 separations process and, thereby, from regulated results. As Qwest uses an
9 end of period annualization for all elements of its test period, none of the
10 elements are included in the development of the revenue requirement.

11

12 **Q. DOES SHE MAKE ANOTHER ADJUSTMENT RELATED TO LNP?**

13 A. Yes, she does. She assumes that since some elements that Qwest and other
14 RBOCs proposed to cover under the FCC surcharge were not included by the
15 FCC that those elements should also be excluded. She is completely wrong.
16 According to the FCC order in CC Docket No. 95-116, items that were not
17 included under the FCC LNP surcharge were to be recovered in the normal
18 course of business.[13]

19

20 **Q. SO HER ASSERTIONS ARE COMPLETELY ERRONEOUS?**

21 A. Yes, they are.

1

2 **Q. WHAT IS HER NEXT ADJUSTMENT?**

3 A. She proposes to exclude all interconnection costs. She claims that there
4 might be double recovery. This is impossible. All wholesale, as well as retail,
5 revenues are included in the determination of the revenue available from
6 current operations. Therefore, there cannot be a double recovery of these
7 costs.

8

9 **Q. WHAT ABOUT HER ASSERTION THAT UTAH IN ITS LAST RATE CASE**
10 **EXCLUDED SUCH COSTS FROM THE REVENUE REQUIREMENT**
11 **DETERMINATION?**

12 A. She is correct as far as she goes. However, she did not tell the rest of the
13 story. The Utah Commission in its Report and Order dated December 4,
14 1997 in Docket No. 97-049-08 excluded interconnection costs because there
15 was a separate proceeding for recovery of those costs. There is no such
16 separate proceeding in Arizona.

17

18 **Q. WHAT IS MS. GATELY'S NEXT ADJUSTMENT?**

19 A. She proposes an adjustment for the results of the FCC Audit Division's
20 findings related to a Continuing Property Record audit. As I am sure Ms.
21 Gately is well aware, Qwest, along with the other RBOCs, has filed a strong

---

[13] In the Matter of Telephone Number Portability, CC Docket No 95-116 and RM8355, adopted May 5,

1 protest related to these audits. There are serious contentions, supported by
2 outside expert opinion, that the audits were seriously flawed. While the FCC
3 finally docketed the results of this audit, no further action has been taken. It
4 would be premature for the Arizona Commission to take any action related to
5 the purported findings of this audit before the FCC, the originator of the audit,
6 has ruled on it.
7
8 **Q. IF THE ARIZONA CORPORATION COMMISSION CHOSE TO ACCEPT**
9 **THE FCC AUDIT PRIOR TO A DECISION BY THE FCC, IS IT EVEN**
10 **POSSIBLE TO MAKE A RELIABEL ADJUSTMENT BASED ON THE**
11 **AUDIT RESULTS?**
12 A. No. The FCC audit was not an audit of Qwest's books with respect to
13 investment in plant. It was a review of the individual property records.
14 Certain of the statistical flaws in the FCC audit absolutely prevent its use for
15 purposes of rendering reliable judgements about the accuracy of Qwest's
16 financial records. In particular, the FCC audit did not test for understatement
17 errors. If the FCC auditor sought to find three pieces of equipment
18 corresponding to three property records and found five pieces of equipment
19 instead, no mention of the two additional pieces of equipment was made in
20 the audit findings. In addition, the audit did not use dollar based sampling
21 techniques. Of the 1188 items sampled (out of a population of 500,000), 449

1998 and released May 12, 1998 at 144. "Carriers can recover <u>any remaining</u> costs through existing

represented items with a dollar value of less than $2,000. Thus, a statistically valid determination of the dollar impact of the audit findings cannot be made.

Q. PLEASE PROCEED WITH HER NEXT ADJUSTMENT.

A. Ms. Gately proposes an adjustment to FCC deregulated products similar to that proposed by other parties. As I have stated, I believe the best solution is to grant state recognition of the deregulated nature of these products and remove them from regulated results.

Q. WHAT IS THE NEXT ADJUSTMENT YOU WILL DEAL WITH?

A. As I stated earlier, Ms. Koehler-Christensen will address directory imputation and Mr. Grate will address pension asset. The next issue I will address is Post Retirement Benefits Other Than Pensions (PBOPs). Qwest filed for permission to adopt accrual accounting for PBOPs under guidelines set forth by the Arizona Corporation Commission. The Company did ask for modification of one condition. No other party opposed the Company's request related to this item. For Ms. Gately to state on page 36 of her testimony that modification of one condition, clearly disclosed, amounts to "failure to meet the requirements" is patently ridiculous.

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mechanisms available for recovery of general costs of providing service." (emphasis added)

Q. MS. GATELY'S NEXT AREA RELATES TO THE SALE OF EXCHANGES. CAN YOU COMMENT?

A. I am almost at a loss to comment on Ms. Gately's position. She states that the removal of the revenues, expenses, taxes and investment related to the exchanges to be sold produces an increase to the revenue requirement. She apparently misread my Supplemental Exhibit GAR-S7G which clearly shows on the bottom line of that exhibit that the revenue requirement is being *reduced* by $11.7M for the removal of the access lines to be sold.

Q. WOULD YOU PLEASE TURN TO THE DOD/FEA TESTIMONY AND ADDRESS MR. LEE'S ADJUSTMENTS.

A. Certainly. He first makes two adjustments to the Company's proposed end of period adjustments related to Customer Operations and Corporate Operations. He bases his adjustments on a trend developed from a regression analysis going back to 1997. He assumes that the past is the best basis to predict the future.

Q. DO YOU AGREE WITH HIM?

A. No, I do not. The Company's analysis was based on fully normalized December 1999 results that were then compared against a trend from October 1999 through February 2000. In the case of both Customer Operations and Corporate Operations, normalizing adjustments were made.

1 In the case of Corporate Operations, a further adjustment was made to lower
2 this group of expenses to trend.
3
4 As stated many times in my rebuttal, the purpose of a properly adjusted test
5 period is to predict the future. Mr. Lee's reliance on old history hardly
6 achieves that purpose. The Company's methodology, however, matches the
7 purpose of the test year to the highest extent possible, given a historical test
8 year. This was proven by the Company's test of Expenses Other than
9 Depreciation as shown on Rebuttal Exhibit GAR-R2. Mr. Lee's adjustments
10 should be ignored.
11
12 **Q. WHAT IS MR. LEE'S NEXT ADJUSTMENT.**
13 A. He also proposes an adjustment related to the results from FCC deregulated
14 products. I will not address his contentions here as I have already dealt with
15 it earlier in my testimony in response to Staff and RUCO, who proposed
16 similar adjustments.
17
18 **Q. PLEASE PROCEED.**
19 A. Mr. Lee's next adjustment deals with directory imputation. Ms. Koehler-
20 Christensen will address that adjustment.
21

1 **Q. MR. LEE THEN MAKES A PRODUCTIVITY ADJUSTMENT. DO YOU**
2 **HAVE ANY COMMENTS ON THIS ADJUSTMENT?**
3 A. Yes, I do. Mr. Lee is applying a productivity adjustment in a mechanical
4 manner. As shown on Rebuttal Exhibit GAR-R2, Expenses Other Than
5 Depreciation, the pro forma level of these expenses proposed by the
6 Company exactly matches the levels of actual expenses as of May 2000.
7 This pro forma level of expenses includes the full value of the out of period
8 wage increases with no productivity offset. Had the Company's pro forma
9 level been higher than actual May 2000, expenses, then a reevaluation of that
10 pro forma level might have been appropriate. However, that was not the
11 case. As with Mr. Lee's other proposals, this adjustment should be rejected.
12
13 **Q. DOES MR. LEE HAVE ANY FURTHER ADJUSTMENTS?**
14 A. Yes, he does. He proposes a depreciation adjustment. Mr. Wu will address
15 that adjustment.
16
17 **Q. DOES THAT COMPLETE YOUR REBUTTAL TESTIMONY?**
18 A. Yes, it does.

BEFORE THE ARIZONA CORPORATION COMMISSION

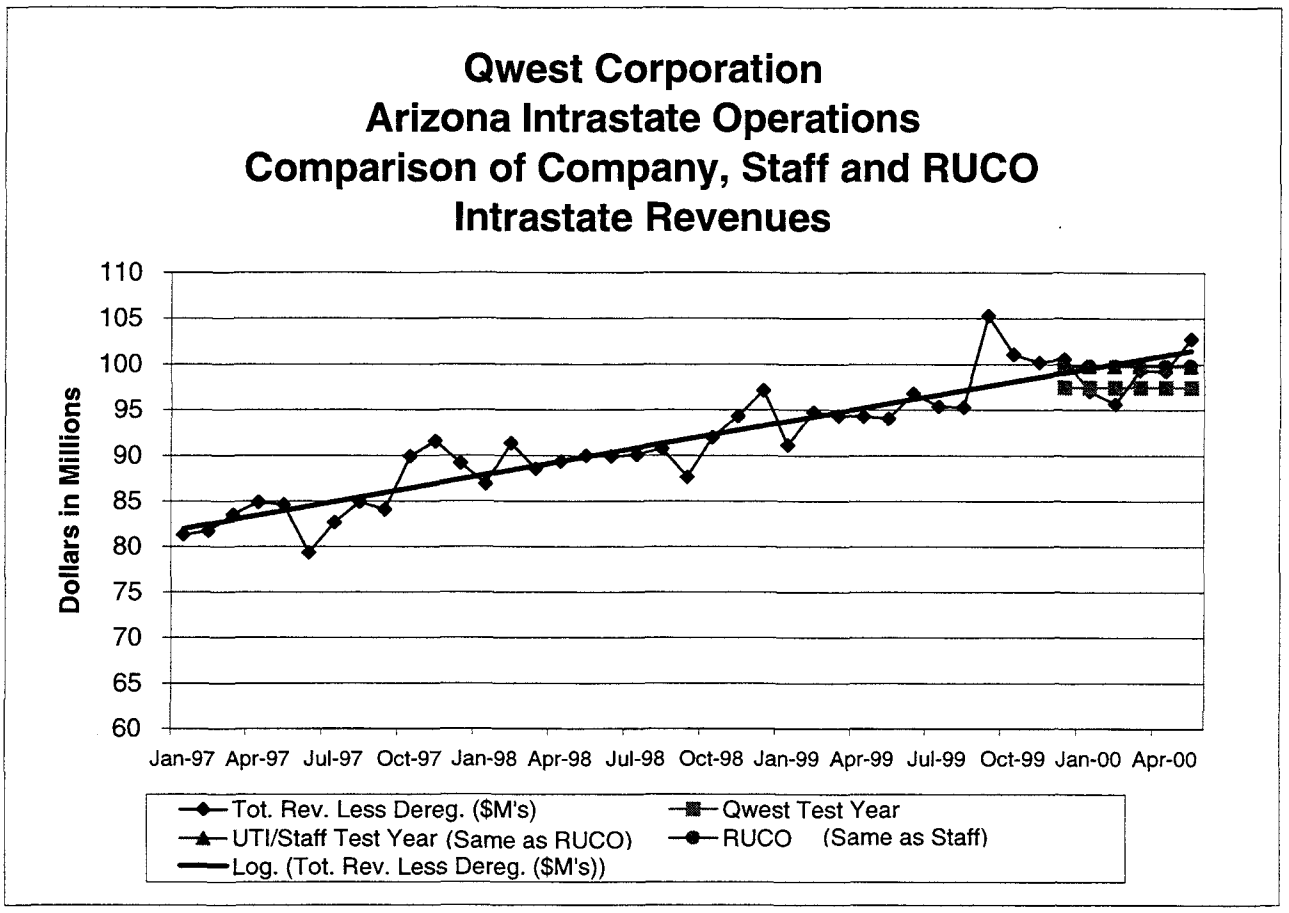
IN THE MATTER OF THE APPLICATION OF U S WEST COMMUNICATIONS, INC., A COLORADO CORPORATION, FOR A HEARING TO DETERMINE THE EARNINGS OF THE COMPANY, THE FAIR VALUE OF THE COMPANY FOR RATEMAKING PURPOSES, TO FIX A JUST AND REASONABLE RATE OF RETURN THEREON AND TO APPROVE RATE SCHEDULES DESIGNED TO DEVELOP SUCH RETURN	)	DOCKET NO. T-01051B-99-0105

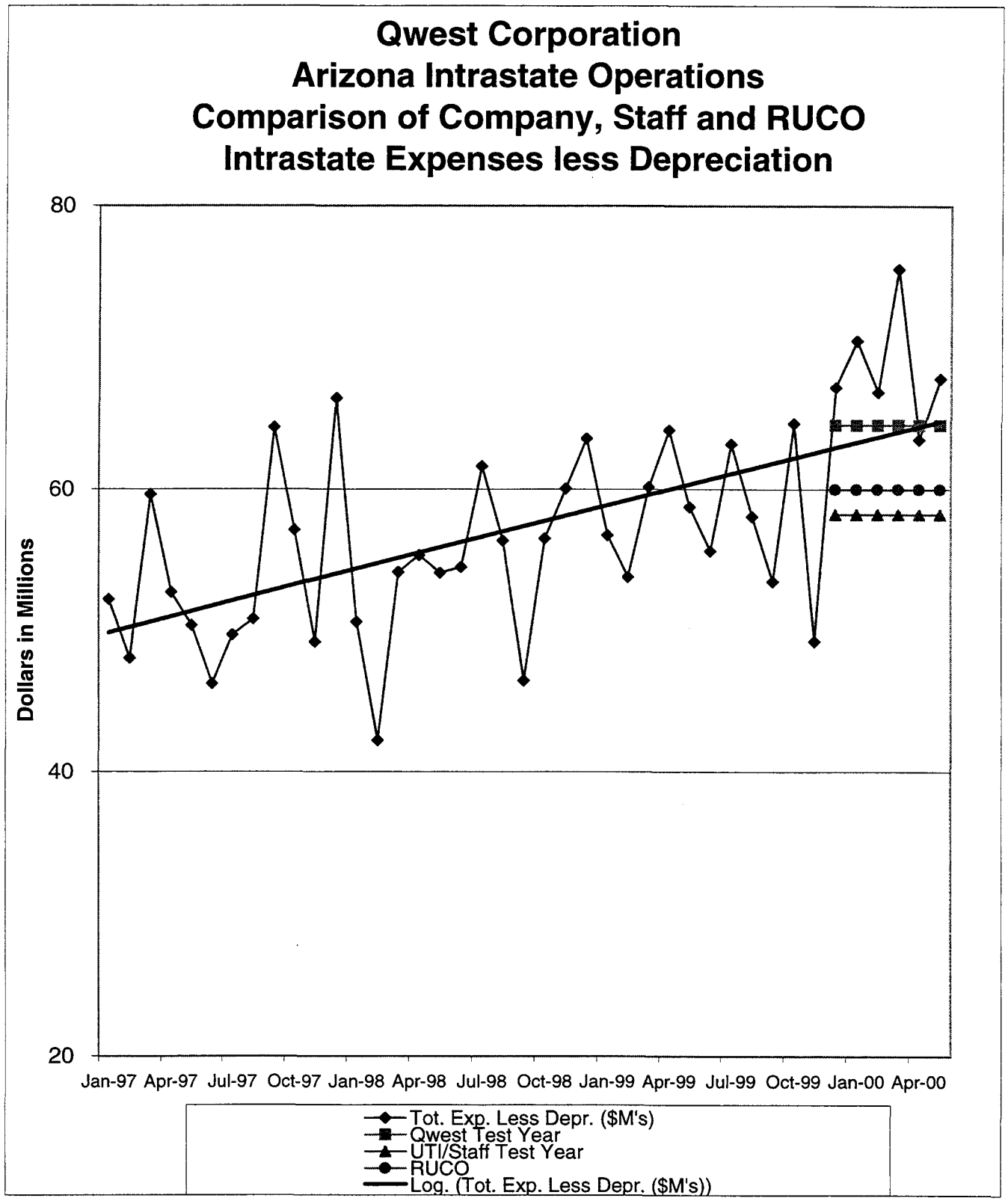
EXHIBITS OF

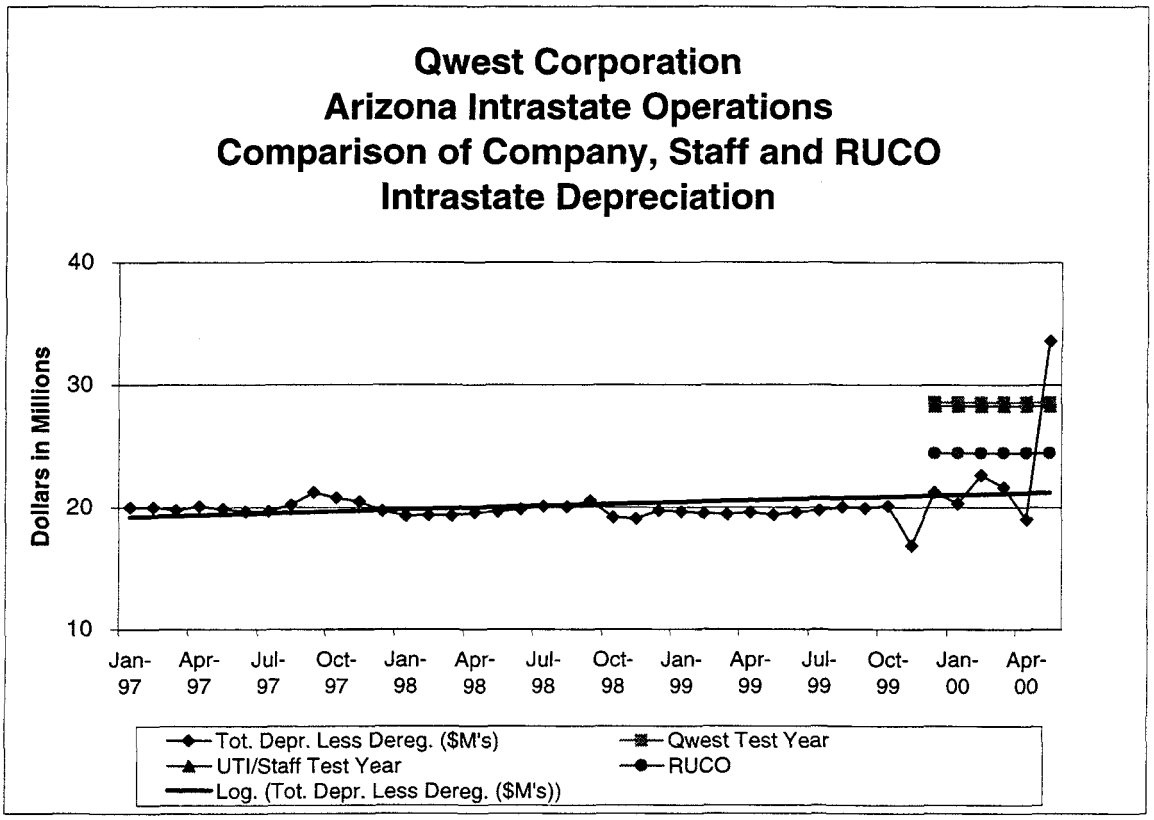
GEORGE REDDING

QWEST CORPORATION

AUGUST 21, 2000


Qwest Corporation
Arizona Intrastate Operations
Comparison of Company, Staff and RUCO
Intrastate Revenues
Dollars in Millions
110
105
100
95
90
85
80
75
70
65
60
Jan-97 Apr-97 Jul-97 Oct-97 Jan-98 Apr-98 Jul-98 Oct-98 Jan-99 Apr-99 Jul-99 Oct-99 Jan-00 Apr-00
Tot. Rev. Less Dereg. ($M's)
Qwest Test Year
UTI/Staff Test Year (Same as RUCO)
RUCO (Same as Staff)
Log. (Tot. Rev. Less Dereg. ($M's))


Qwest Corporation
Arizona Intrastate Operations
Comparison of Company, Staff and RUCO
Intrastate Expenses less Depreciation
80
60
40
20
Dollars in Millions
Jan-97 Apr-97 Jul-97 Oct-97 Jan-98 Apr-98 Jul-98 Oct-98 Jan-99 Apr-99 Jul-99 Oct-99 Jan-00 Apr-00
Tot. Exp. Less Depr. ($M's)
Qwest Test Year
UTI/Staff Test Year
RUCO
Log. (Tot. Exp. Less Depr. ($M's))


Qwest Corporation
Arizona Intrastate Operations
Comparison of Company, Staff and RUCO
Intrastate Depreciation
Dollars in Millions
40
30
20
10
Jan-97
Apr-97
Jul-97
Oct-97
Jan-98
Apr-98
Jul-98
Oct-98
Jan-99
Apr-99
Jul-99
Oct-99
Jan-00
Apr-00
Tot. Depr. Less Dereg. ($M's)
Qwest Test Year
UTI/Staff Test Year
RUCO
Log. (Tot. Depr. Less Dereg. ($M's))

Statement of Position (SOP) 98-1
Accounting for the Costs of Computer Software Developed or Obtained for Internal Use
Calculation of Revenue Requirements over Time if SOP 98-1 Adopted for Intrastate Ratemaking
Based on Methodology Proposed by Staff in Direct Testimony

Ln		$M	1999	2000	2001	2002	2003	2004	2005
0	Total Software Under Construction by Year		420	511	500	500	500	500	500
1	Current Software Into Service (Acct 2001)		420	511	500	500	500	500	500
2	**Intangible Asset (BOP)**		-	420	931	1,431	1,931	2,011	2,000
3	Adds		420	511	500	500	500	500	500
4	Retirements		-	-	-	-	420	511	500
5	Intangible Asset (EOP)		420	931	1,431	1,931	2,011	2,000	2,000
6	Accumulated Amortization (BOP)		-	84	270	556	943	1,009	1,000
7	**Amort of Asset Capitalized Yr**	1	84	84	84	84	84		
8		2		102	102	102	102	102	
9		3			100	100	100	100	100
10		4				100	100	100	100
11		5					100	100	100
12		6						100	100
13		7							100
14	**Lines 14 - 26 are all zeroes**	8							
27	Total Amort for the year (cum Ln 7-26)		84	186	286	386	486	502	500
28	Less Retirements (Ln 4)		-	-	-	-	420	511	500
29	Accumulated Amortization (EOP)		84	270	556	943	1,009	1,000	1,000
30	Deferred Taxes (BOP)		-	135	266	352	397	403	402
31	Adds (40.2% of Ln 3)		169	205	201	201	201	201	201
32	Turnaround (40.2% of Ln 27)		34	75	115	155	195	202	201
33	Deferred Taxes (EOP) (L30+31-32)		135	266	352	397	403	402	402
34	Rate Base (BOP) (Ln2 - Ln6 - Ln30)		-	201	395	523	591	599	598
35	Rate Base (EOP) (Ln5 - Ln29 - Ln33)		201	395	523	591	599	598	598
	Company Level using AZ Tax/Return/Grossup Factors								
36	Authorized NOI Return at 10.86%		22	43	57	64	65	65	65
37	NOI Effect of Income Statement Changes (-(-Ln1+Ln27)*(1-40.2%))		201	194	128	68	8	(1)	-
38	NOI Effect of SOP 98-1 (Ln36 - Ln37)		(179)	(151)	(71)	(4)	57	66	65
39	Revenue Effect (Ln38 * 1.7056 gross-up)		(305)	(258)	(121)	(7)	97	113	111
	Allocation of Revenue Requirement Components to Arizona Level								
40	Arizona Prorate Factor	14.927%							
41	Arizona Intrastate Factor for a/c 6724	79.22%							
42	Authorized NOI Return (Ln36 * Ln40 * Ln41)		3	5	7	8	8	8	8
43	NOI Effects on Income Statement (Ln37 * Ln40 * In41)		24	23	15	8	1	(0)	-
44	NOI Effect of SOP 98-1 (Ln42 - Ln43)		(21)	(18)	(8)	(0)	7	8	8
45	Revenue Effect (Ln44 * 1.7056)		(36)	(31)	(14)	(1)	11	13	13

ASSUMPTIONS:
ANNUAL SHIFT FROM EXPENSE TO CAPITAL BASED ON CURRENT SPENDING / PROJECTIONS
5-YEAR AMORTIZATION PERIOD
ASSUME BEGINNING OF YEAR CAPITALIZATION AND AMORTIZATION
USING ARIZONA PRORATE, SEPARATIONS AND TAX FACTORS

BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF U S WEST COMMUNICATIONS, INC., A COLORADO CORPORATION, FOR A HEARING TO DETERMINE THE EARNINGS OF THE COMPANY, THE FAIR VALUE OF THE COMPANY FOR RATEMAKING PURPOSES, TO FIX A JUST AND REASONABLE RATE OF RETURN THEREON, AND TO APPPROVE RATE SCHEDULES DESIGNED TO DEVELOP SUCH RETURN.	)	**DOCKET NO. T-1051B-99-105**
	)	**AFFIDAVIT OF GEORGE REDDING**
STATE OF COLORADO	) :	**ss**
COUNTY OF DENVER	)	

George Redding, of lawful age being first duly sworn, depose and states:

1. My name is George Redding. I am Director – Regulatory Finance of Qwest Corporation in Denver, Colorado. I have caused to be filed written rebuttal testimony and rebuttal exhibits in support of Qwest in Docket No. T-01051B-99-0105

2. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct to the best of my knowledge and belief.

Further affiant sayeth not.

George Redding

SUBSCRIBED AND SWORN to before me this 17th day of August, 2000.

Notary Public

WILLIAM R. CURTIS NOTARY PUBLIC STATE OF COLORADO

My Commission Expires:

My Commission Expires 10/28/2003

BEFORE THE

ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF U S WEST COMMUNICATIONS, INC. A COLORADO CORPORATION, FOR A HEARING TO DETERMINE THE EARNINGS OF THE COMPANY FOR RATEMAKING PURPOSES, TO FIX A JUST AND REASONABLE RATE OF RETURN THEREON AND TO APPROVE RATE SCHEDULES	)	DOCKET NO. T-01051B-99-0105

REBUTTAL TESTIMONY OF

SCOTT A. MCINTYRE

QWEST CORPORATION

AUGUST 21, 2000

REBUTTAL TESTIMONY OF SCOTT A. MCINTYRE

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EXECUTIVE SUMMARY

My rebuttal testimony will address issues raised by Arleen Starr for AT&T, William Dunkel for the Commission Staff, Lee L. Selwyn for AT&T and Michael J. Ileo, Ph.D., representing the Arizona Payphone Association. These witnesses address issues concerning switched access, private line, Public Access Lines and the deregulation of high capacity services, as proposed by Qwest in this rate case.

AT&T supports switched access reductions, but wants prices to be reduced to cost. Mr. Dunkel, for the Staff, does not see the need to reduce switched access at all. Harry M. Shooshan III has proposed access reductions in the context of a price regulation plan as an alternative to rate of return regulation. This plan will be discussed by other Qwest witnesses in the context of alternative regulation. Qwest believes some reductions in switched access are reasonable, but significant reductions are only appropriate in the context of rate rebalancing or universal service funding.

Staff contends that private line rates should be increased, but to a much larger degree than Qwest supports. Qwest believes that some rebalancing of private line pricing is appropriate, but the level suggested by Mr. Dunkel would create significant rate shock to customers and these rates would not be sustainable in the competitive private line marketplace.

Mr. Lee L. Selwyn, for AT&T takes issue with Qwest's position that high capacity services are competitive and contends that these services should not be

deregulated. Qwest maintains that these services are already offered in competitive tariffs and that as long as pricing flexibility already exists, deregulation is appropriate to level the competitive playing field.

Dr. Ileo, for the Arizona Payphone Association asserts that Public Access Line (PAL) rates do not conform to the FCC New Services Test, are priced too high, and contain subsidies that should be removed. This would reduce the price of PAL services dramatically. Qwest believes the PAL rate in effect at the beginning of this case ($42.31) is reasonable, meets the FCC new services test and should be approved by the Commission in this rate case. The proposal from the APA amounts to a request for preferential treatment that cannot be justified.

IDENTIFICATION OF WITNESS

Q. PLEASE STATE YOUR NAME, OCCUPATION, AND PLACE OF EMPLOYMENT.

A. My name is Scott A. McIntyre. I work for Qwest Corporation ("Qwest", or "Company") (formerly known as U S WEST Communications, Inc.) My title is Director – Product and Market Issues. My responsibilities include developing markets and prices strategies for Qwest and supporting these positions in the regulatory arena. My business address is 1600 7th Avenue, Room 3009, Seattle, Washington 98191.

Q. ARE YOU THE SAME SCOTT A. MCINTYRE WHO FILED SUPPLEMENTAL TESTIMONY IN THIS CASE?

A. Yes, I am.

PURPOSE OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. The purpose of my rebuttal testimony is to address and clarify certain issues raised by AT&T witness, Arleen M. Starr and AT&T witness Lee L. Selwyn. I will also rebut testimony offered by William Dunkel on behalf of the Staff of the Arizona Corporation Commission and Dr. Michael J. Ileo on behalf of the Arizona Payphone Association. While the testimony of these witnesses deals with several issues, I will focus my rebuttal on the

topics of switched access, private line, Public Access Lines (PAL) and the deregulation of high capacity services.

SWITCHED ACCESS SERVICE

Q. WHAT IS YOUR UNDERSTANDING OF AT&T'S POSITION ON SWITCHED ACCESS AS OFFERED BY AT&T WITNESS ARLEEN STARR?

A. AT&T agrees with Qwest that switched access is a source of support for basic exchange services. AT&T also agrees with Qwest, that the cost of the loop should be supported by the end user, not the interexchange carriers who provide long distance services. AT&T's position departs from Qwest's however, in that AT&T believes that switched access prices should be set at cost.

Q. DO YOU AGREE THAT ACCESS PRICES SHOULD BE SET AT COST?

A. No, absolutely not. This would not only eliminate any support for basic exchange services; it also would eliminate any contribution to the running of the business. In a sense, this would reverse the subsidy to the benefit of the interexchange carriers.

Q. ARE THE CARRIERS REQUIRED TO PASS ALONG SWITCHED ACCESS RATE REDUCTIONS TO CUSTOMERS?

A. Generally, no, however Ms. Starr has asserted that AT&T would abide by the provision in its tariff for the Access Cost Adjustor Mechanism (ACAM).

This mechanism was ordered by the Commission in 1988, but it affects only AT&T. End users may or may not see any benefits of reduced access charges to other carriers.

Q. CAN THE COMMISSION FORCE SWITCHED ACCESS REDUCTIONS TO BE PASSED ON TO END USERS?

A. It would seem to be a reasonable part of any switched access reduction order, however I'm not sure how this would be accomplished.

Q. IF PART OF THE REVENUE REQUIREMENT IN ARIZONA IS SHIFTED FROM SWITCHED ACCESS, PAID BY THE CARRIERS, TO THE END USERS AS PART OF THEIR BASIC RATES, WHO BENEFITS THE MOST?

A. It is difficult to be sure. Clearly, the carriers benefit immediately from the reduced cost of switched access. Qwest would receive the revenue from a different source and therefore remain relatively neutral. The end user may see a reduction in toll charges that may offset, on average, part of the increase in their basic rates. Those who use more toll services will benefit more than those who use less. Depending on how (and if) carriers pass on these reductions to end users, it may be less than a dollar for dollar benefit.

Q WHY DOES ANY SHIFT HAVE TO OCCUR AT ALL?

A. The shift has to occur because of the prospect of competitive bypass. Carriers can and do bypass switched access in a number of ways and it

means that the high margins that exist in switched access cannot be sustained over time. As these services are bypassed, switched access revenues will be reduced and the economic support for basic exchange service will erode anyway. This makes the managed reduction of switched access rates necessary through rate rebalancing and possibly through state universal service funding.

Q. HOW ARE SWITCHED ACCESS RATES BYPASSED?

A. Switched access can be bypassed by use of direct connections from the carriers to the end users. Carriers can construct their own facilities, purchase private lines from Qwest, or purchase facilities from some other provider. These private lines used to connect customers directly with carriers are also known as special access.

Q. PLEASE EXPLAIN HOW THIS BYPASS WORKS.

A. A direct circuit from the end user to a carrier Point of Presence (POP) bypasses any switching or switched access transport provided by Qwest. This circuit carries the toll traffic to the carrier and is billed on a flat rate basis instead of the per-minute basis charged for switched access. As long as the customer uses enough toll to justify the dedicated circuit, the carrier saves the switched access charges and passes some of these savings along to the customer in the form of reduced toll charges.

Q. IN HIS TESTIMONY FOR STAFF, MR. DUNKEL STATES THAT THIS WORKS ONLY FOR EXTREMELY HIGH TOLL USERS. IS THIS A TRUE CHARACTERIZATION?

A. No, not at all. Let's take the example of a DS1 private line. A DS1 carries 24 channels of voice traffic. A typical DS1 is priced about $250 per month including the termination of the circuit and some interoffice transport mileage. During an 8-hour workday, this circuit can carry over 250,000 minutes of toll traffic. This equates to an effective cost of less than 1/10 of one cent per minute. This means that switched access costs are almost completely eliminated from the equation. Any customer who generates more than $250 per month of toll, and many customers do, is an excellent target for such bypass.

Q. BUT, DO MANY RESIDENTIAL CUSTOMERS GENERATE THIS KIND OF TOLL TRAFFIC?

A. No, the average residential customer does not generate this level of traffic, but many business customers do. These business customers are the targets for such bypass and this lowers the carrier's average cost per minute of use dramatically. Large volume business customers account for more than their average share of toll revenues. For example, 2% of the business customers might generate as much as 40% of the revenue. This makes these high volume customers very desirable.

Q. IN THIS SCENARIO, DOESN'T QWEST STILL GET THE REVENUE FOR PRIVATE LINES?

A. Yes. However, in this case, Qwest would receive $250 per month for the DS1 instead of over $11,000 per month in switched access revenue. This $11,000 is what Qwest would receive from 253,000 minutes carried by the DS1 at $.045 (4.5 cents) per minute for originating or terminating toll traffic.

Q. MR. DUNKEL ASSERTS THAT ALL OF THE PRIVATE LINE BYPASS THAT WILL OCCUR HAS ALREADY OCCURRED. DO YOU AGREE?

A. No. There are at least four key reasons why this is not true.

First, pricing pressure on private line services, especially at the high capacity level, continues to be downward. These services continue to drop in price and therefore the threshold for bypass gets lower.

Second, consumer usage of toll services continues to grow. This means more and more customers are reaching the level where this type of bypass is viable.

Third, the competition for reduced toll rates is significant. Carriers are offering $.05 per minute rates and they need to get their costs down to accommodate these rates. Private lines that can provide traffic costs as low as $.001 per minute are a viable alternative that continues to get more viable as rates are driven lower.

1 Fourth, as customers become more aware of their options in
2 telecommunications, they will ask for such "deals" from carriers and this
3 will increase the bypass opportunities.
4
5 **Q. MS. STARR ASSERTS THAT THE TELECOMMUNICATIONS ACT OF**
6 **1996 REQUIRES ACCESS SERVICES TO BE PRICED AT FORWARD**
7 **LOOKING ECONOMIC COST. IS THIS YOUR UNDERSTANDING?**
8 A. Absolutely not. There is no requirement of the sort. The Act requires
9 service to be cost based and may include a reasonable profit. Based on
10 cost does not mean equal to cost by any definition. This says that prices
11 must have a relationship to their underlying cost plus a reasonable profit.
12 In this case, Arizona public policy makers have a role in deciding what is
13 reasonable. Dr. Taylor discusses this topic in detail in his rebuttal
14 testimony filed in this case.
15
16 **Q. MS. STARR ALSO ASSERTS THAT REDUCING SWITCHED ACCESS**
17 **RATES WILL TRIGGER INCREASED COMPETITION FOR TOLL**
18 **SERVICE. DO YOU AGREE?**
19 A. I believe the competition for toll services is pretty robust right now. All
20 carriers pay the same access charges to Qwest and all carriers have the
21 same alternatives available. Reducing rates will affect all carriers equally,
22 so I can't see how competition will be stimulated by reducing these rates.
23
24 **Q. DOES AT&T COMPETE WITH QWEST FOR TOLL SERVICES IN**
25 **ARIZONA?**

1 A. Only for IntraLATA toll service. Qwest is prohibited from offering
2 InterLATA toll. InterLATA toll consists of interLATA -intrastate and
3 interstate toll calling, which is the bulk of the long distance business.
4
5 **Q. IS THERE A SEPARATE PROCEEDING DEALING WITH THE ENTRY**
6 **OF QWEST INTO THE INTERLATA TOLL MARKET?**
7 A. Yes, this proceeding is Docket T-00000B-97-0238 and it will determine
8 how and when Qwest may enter this market.
9
10 **Q. HAS QWEST PROPOSED SWITCHED ACCESS RATE REDUCTIONS**
11 **IN THIS RATE CASE PROCEEDING?**
12 A. Yes. Qwest has proposed some restructure of local transport rates
13 including the addition of new rate elements. We have also proposed
14 reductions in the Interconnection Charge (IC). This results in an overall
15 reduction in revenues of $5 M.
16
17 **Q. DOES AT&T APPEAR TO SUPPORT THE STRUCTURAL CHANGES**
18 **FOR LOCAL TRANSPORT THAT QWEST HAS PROPOSED?**
19 A. Yes, although Ms. Starr adds a caveat that prices should be lowered to
20 cost as well.
21
22 **Q. DOES MR. DUNKEL, FOR THE STAFF, SUPPORT THE PROPOSED**
23 **TRANSPORT CHANGES?**
24 A. Yes, however Mr. Dunkel wants the changes to be revenue neutral, with
25 no revenue reduction.

Q. ARE THE RATES PROPOSED BY QWEST THE SAME AS THOSE IN THE FCC ENVIRONMENT?

A. Not exactly, and for a couple of good reasons. First, the FCC rates are not set with a rate of return philosophy. The FCC uses a price cap system where prices reside in "buckets" of rates that are capped on a total bucket basis. This means that various rates within the buckets are adjusted annually through complicated methods that can, over time, cause some prices to drift from their underlying cost structure. This creates prices that don't always fit well in a rate of return environment. Second, the FCC structure also contains an End User Common Line charge (EUCL), that is charged to end users. This means that while the switching and transport rates charged to carriers may appear lower than some state rates, the total charge to end users is higher than it may seem. The EUCL is currently set at $4.35 for single line residence and business customers. If you average this charge over typical end user toll volumes, it equates to about 2 cents per minute. Currently in Arizona, rates for switched access are certainly higher, in aggregate, than the FCC rates, but not as high, from an end user perspective, as it may appear.

Q. MS. STARR CLAIMS THAT THE FACT THAT QWEST IS PROPOSING SLIGHT INCREASES FOR DS1 AND DS3 ENTRANCE FACILITIES IS EVIDENCE THAT THESE SERVICES ARE NOT COMPETITIVE. WOULD YOU COMMENT ON THIS?

A. The proposed changes to the local transport component of switched access constitute some restructure and addition of new elements. The overall impact is a reduction of total switched access revenues of $5 M. It is true that there are components that increased, but this was done to mirror existing rates in the FCC environment. Ms. Starr has argued that state rates differ from FCC rates, but in this case we proposed making them the same. These DS1 and DS3 rates have been proposed to equal the FCC private line rates for these services. Private lines are substitutable for switched access entrance facilities so it made sense to make them equal. The fact that prices for specific elements within a category of services vary, up or down is not evidence of anything. Prices in competitive markets fluctuate.

Q. DOES THE STAFF TAKE A POSITION ON WHETHER INCREASING PRICES FOR SOME RATE ELEMENTS ARGUES AGAINST THE COMPETITIVE NATURE OF THE SERVICE?

A. It appears that Mr. Dunkel does not believe there is a direct connection. Mr. Dunkel states "It is reasonable to expect that the majority of private line revenues are in the category that the Commission has classified as competitive." Mr. Dunkel proposes that private line rates may be raised by as much as $21.6M (44%) and makes no claim that this would change their competitive nature. Competition means there are reasonable alternatives. It does not mean prices are not subject to some variations.

Q. WOULD YOU SUMMARIZE YOUR UNDERSTANDING OF MR. DUNKEL'S POSITION ON SWITCHED ACCESS SERVICE?

A. Mr. Dunkel states that current switched access price levels are fine. He supports the restructure of rates as proposed by Qwest, but he wants it done in a revenue neutral manner. Mr. Dunkel states that it is appropriate that switched access share the cost of the loop because toll traffic is carried over the loop. He does not agree with the FCC, AT&T, other Interexchange carriers, Qwest, and many regulatory bodies that the non-traffic sensitive cost of the loop should be borne by the local ratepayer as the user and beneficiary of the traffic on the loop.

Q. SO, WHERE DOES QWEST STAND RELATIVE TO THE TWO EXTREMES PRESENTED BY MR. DUNKEL AND AT&T?

A. Qwest stands between the two extremes. It is Qwest's position that switched access rates do, indeed, subsidize basic exchange rates. There needs to be some downward adjustment of switched access as the cost burden is justifiably shifted toward the end user. Taking these rates to cost, however, as AT&T suggests, is ridiculous, cannot be justified, and shifts the benefit heavily toward the carriers.

SWITCHED ACCESS SUMMARY

Q. WOULD YOU PLEASE STATE QWEST'S POSITION ON SWITCHED ACCESS PRICING?

A. Qwest believes that switched access is certainly a source of revenue support for basic exchange services. We believe this support is not sustainable in the long run and that implicit subsidies need to be eliminated. This can be accomplished by raising all services to prices above cost or, at least replacing the implicit subsidies with explicit subsidies that can be dealt with in a straightforward manner. In general, subsidies do not work well in a competitive environment where artificially high margins invite more competition than might normally exist and subsidized services may thwart competitive entry.

For switched access in Arizona, this means some reduction in overall rates. In the context of rate rebalancing, switched access is one of the key places to look for revenue reductions. The Carrier Common Line Charge (CCL) should be reduced and possibly eliminated if residential rates are increased or offset with some universal service fund. We originally proposed a switched access reduction of $5.0 M, and this still seems reasonable in the context of the other prices being proposed in this case. However, if additional rate rebalancing is desired, or if universal service funding is established, we would propose further rate reductions to coincide with those adjustments.

HIGH CAPACITY DEREGULATION

Q. HAS ANYONE SUBMITTED TESTIMONY IN THIS CASE CONCERNING THE DEREGULATION OF HIGH CAPACITY SERVICES?

1 A. Yes, Lee L. Selwyn has submitted testimony on behalf of AT&T that states
2 that high capacity services should not be deregulated.
3
4 **Q. WHAT IS THE BASIS FOR MR. SELWYN'S ARGUEMENT?**
5 A. He claims that Qwest has not proven that these services are competitive.
6
7 **Q. DID QWEST INTRODUCE EVIDENCE AS TO THE STATE OF**
8 **COMPETITION WITH RESPECT TO THESE SERVICES?**
9 A. Yes. We have offered some evidence of competition, but that is not the
10 key element of our proposal. These services are already offered under
11 competitive tariffs in Arizona, and Qwest already has pricing flexibility for
12 these services. Mr. Dunkel, for the Staff agrees that private line services
13 are competitive. Qwest bears a regulatory burden however, that our
14 competitors do not carry. The attempt here is to level the playing field on
15 these competitive services so Qwest may compete on equal footing.
16 There are methods and procedures in a regulated environment that take
17 time and money to manage. This creates a cost of business that our
18 competitors do not have to cover. Since most discussions about
19 competition focus on pricing, and Qwest already has pricing flexibility for
20 these services, it seems reasonable that we should have procedural
21 flexibility, as does our competition.
22
23 **Q. ARE HIGH CAPACITY SERVICES CURRENTLY OFFERED IN**
24 **COMPETITIVE TARIFFS IN ARIZONA?**

A. Yes. DS1 and DS3 private line services are found in the Arizona Competitive Private Line Transport Services Tariff. ATM Cell Relay Service, Frame Relay Service, Transparent LAN Service, and Megabit Service are all found in the Competitive Advanced Communications Services Tariff.

Q. CAN CUSTOMERS BUY HIGH CAPACITY SERVICES UNDER EITHER THE STATE OR FCC JURISDICTION?

A. Yes. For switched access transport services that carry both interLATA and intraLATA traffic, the percentage of use for each category determines what percentage of the circuit is charged out of the FCC tariff and what percentage is charged out of the state tariff. For private line circuits there is a threshold to determine jurisdiction. InterLATA circuits, or circuits that carry at least 10% interLATA traffic are supposed to be purchased out of the FCC tariff. The customer is the only one who really knows what traffic is being carried on these circuits so there is the possibility that circuits are ordered from the wrong tariff or price list. Since these circuits are virtually the same, Qwest attempts to keep pricing similar wherever possible. Regulations in different jurisdictions make this difficult, but we try to minimize "tariff shopping" when we can.

Q. DO THESE SERVICES HAVE PRICING FLEXIBILITY UNDER THE FCC TARIFF?

A. There is some pricing flexibility under price cap rules, within the "buckets" of services. There is no general pricing freedom at this time, however.

Q. IS QWEST PURSUING PRICING FREEDOM UNDER THE RECENT FCC PRICING FLEXIBILITY ORDER?

A. We are currently evaluating our position concerning this order and we are gathering some data. We have not yet determined how we will proceed.

Q. WHEN THE FCC DENIED QWEST'S PETITION FOR FOREBEARANCE, DID QWEST PURSUE ANY AVENUE TO TAKE ISSUE WITH THE FCC'S ORDER?

A. No, we believe we will be able to achieve the pricing flexibility we need under the provisions of the Pricing Flexibility Order. We have not yet proceeded along this path, however.

Q. ARE THE SERVICES IN QUESTION PREDOMINANTLY PURCHASED OUT OF THE FCC TARIFF?

A. Yes, most of the traffic carried by these services is "contaminated" with interLATA traffic, therefore under FCC rules, these circuits must be purchased under FCC jurisdiction.

Q. IF CUSTOMERS HAVE THE OPTION OF PURCHASING THESE SERVICES FROM THE FCC TARIFF, DO THE FCC RATES SET A STANDARD FOR PRICING OF THESE SERVICES?

A. Yes, intraLATA prices that are higher than FCC rates do not attract much business. IntraLATA services, out of state price lists, catalogs, or tariffs must be priced the same or lower in order to be viable.

1

2 **Q. DO STATE RATES ALWAYS MATCH EXACTLY WITH FCC RATES?**

3 A. No, as I mentioned earlier, the FCC has specific procedures on pricing
4 that may not match up well with cost structures and these rates may
5 change as often as every year. These variables tend to keep prices
6 similar but not exactly the same.

7

8 **Q. WHY DO CUSTOMERS BUY THESE SERVICES ON A STATE**
9 **(INTRALATA) BASIS AT ALL?**

10 A. The FCC tariff is rigid on its pricing and the terms and conditions offered.
11 If customers can configure their networks to justify intraLATA services
12 under state jurisdiction, we can sometimes offer different terms or
13 conditions than are available under FCC jurisdiction. This may mean a
14 different contract term, some flexibility on converting from other services,
15 or some rate protection that is not available under FCC terms.

16

17 **Q. DOES THIS MEAN THAT WHILE THE FCC TARIFF IS AN**
18 **ALTERNATIVE FOR THESE SERVICES, CUSTOMERS CAN**
19 **SOMETIMES GET A BETTER DEAL BY USING INTRALATA**
20 **SERVICES?**

21 A. Yes, if these services fit their network configuration.

22

23 **Q. DOES MR. DUNKEL, FOR THE COMMISSION STAFF, TAKE A**
24 **POSITION ON THIS DEREGULATION?**

A. He does not address it directly, however part of his discussion about private line services seems to support the concept. Mr. Dunkel has determined that the revenue requirement for private line services is $70.9 M. Rates for private line produced $49.3 M during the 1999 test year and this created a shortfall of $21.6 M. Mr. Dunkel suggests that the Commission authorize an increase in private line revenues to account for this shortfall because he does not want this $21.6 M in competitive revenue shortfall to be covered by other ratepayers of non-competitive services. Mr. Dunkel also suggests that such an increase in rates may not be sustainable in a competitive market and it would be up to Qwest management to decide if such a risk should be taken.

This suggests that if private line were deregulated and the revenue requirement, as well as the actual revenue, were taken out of the rate base, the Commission would not have to worry whether this revenue shortfall was covered by other customers. With the service deregulated, revenue requirements, revenue actuals and even costs could be removed from revenue requirement calculations and the risk of such a pricing shortfall would be Qwest's alone to manage.

Q. WHAT ABOUT THE OTHER SERVICES PROPOSED FOR DEREGULATION BY QWEST?

A. Generally, Frame Relay, ATM Cell relay, Transparent LAN Service, and Megabit Service are considered by most people to be less essential and more competitive than private line services. If Mr. Dunkel has the revenue

requirement concern about private line, it seems he would be even more supportive of deregulation for these other services.

SUMMARY POSITION ON HIGH CAPACITY SERVICE DEREGULATION

Q. PLEASE SUMMARIZE QWEST'S POSITION ON THE DEREGULATION OF HIGH CAPACITY SERVICES AS PROPOSED BY QWEST IN THIS PROCEEDING.

A. Qwest already has pricing flexibility for the services proposed for deregulation. The current competitive tariffs allow for pricing up to maximum level or individual case basis pricing. These services have been priced in this way for many years or in some cases from the inception of the service. These services are offered by other providers and are offered by Qwest under jurisdiction of the FCC. Qwest is proposing deregulation to level the playing field with our competitors, not for pricing freedom, which we already have, but for relief from the procedures and costs surrounding regulation. Other providers of these services do not carry the burden of regulatory procedure and Qwest expects the same competitive conditions to apply to all providers of service.

PUBLIC ACCESS LINE (PAL) SERVICE

Q. HAS ANY OTHER PARTY SUBMITTED TESTIMONY IN THIS CASE THAT YOU WOULD LIKE TO DISCUSS?

A. Yes, Michael J. Ileo, Ph.D. has submitted testimony of behalf of the Arizona Payphone Association on the subject of Public Access Lines. Other Qwest witnesses will also address issues raised by Dr. Ileo. I will specifically address proposed rates and why these rates are reasonable.

Q. WHAT IS PUBLIC ACCESS LINE SERVICE?

A. Public Access Line (PAL) Service provides basic exchange access for use by a Payphone Service Provider (PSP) to connect pay telephones (payphones) to Qwest switched network. Payphones are placed at locations, accessible to the public, as determined by the owner of the property. The PAL service connects the payphone to the network so that users of the payphone can place local and long distance calls.

Q. WHAT TYPES OF PAL SERVICES ARE AVAILABLE TO PAYPHONE SERVICE PROVIDERS IN ARIZONA?

A. There are two types, Basic PAL and Smart PAL. Basic PAL Service provides a voice grade line designed for use with a "smart" payphone set which performs its own coin control functions. The second type, Smart PAL, is designed for use with a "dumb" payphone set which cannot perform its own coin control functions. With Smart PAL, coin control functions are performed by Qwest's central office. Both Basic and Smart PAL are available with usage-sensitive local calling or with unlimited local calling for a flat monthly rate.

Q. WHAT IS YOUR UNDERSTANDING OF DR. ILEO'S MAIN CONCERNS ABOUT PAL RATES?

A. Dr. Ileo discusses many cost and price issues that will be addressed by Dr. William E. Taylor and Jerrold L. Thompson on behalf of Qwest. I will briefly address the FCC New Services Test, and I will discuss the reasonableness of Qwest's PAL rates which is relevant to the reasonable contribution allowed by the FCC.

FCC NEW SERVICES TEST

Q. PLEASE EXPLAIN THE FCC'S NEW SERVICES PRICE TEST?

A. The "new services" price test, as set forth in 47 C.F.R. Section 61.49(g)(2), is a benchmark that must be met when the Company files a federal tariff for a new service. Under that test, each service must be priced above cost, and each service must include no more than a reasonable level of contribution.

Q. WHAT IS THE PURPOSE OF THE FCC'S NEW SERVICES PRICE TEST?

A. Based on statements made in its orders, the FCC developed the new services price test to provide a flexible pricing guideline that guards against predatory, excessive and discriminatory pricing. The FCC's rules accomplish this by requiring a cost basis for both lower and upper price bounds, thus guarding against pricing that is either too low or too high. In developing its pricing rules for new services, the FCC recognized the need

for contribution levels in the prices that would give LECs incentive to innovate and develop still more new services.

Q. HAS THE FCC DEFINED A SPECIFIC COST OR LEVEL OF CONTRIBUTION THAT MUST BE USED TO SET THE PRICE UNDER THE NEW SERVICES PRICE TEST?

A. No. The FCC states, "once the direct costs have been identified, LECs will add an appropriate level of overhead costs to derive the overall price of the new service. To provide the flexibility needed to achieve efficient pricing, we are not mandating uniform loading, but BOCs will be expected to justify the loading methodology they select as well as any deviations from it."[1]

Q. WHAT DO YOU BELIEVE THE FCC MEANT BY THE ABOVE STATEMENT?

A. It is clear that the FCC was rejecting the concept of uniform loadings — a consistent percentage markup over direct costs -- and that it would expect the LECs' filings to have various loadings on various products and services. The FCC meant that flexibility is needed, and uniform loadings would not promote efficient pricing and innovation.

Q. WHAT COST BASIS DOES QWEST USE WITH NEW SERVICE FILINGS BEFORE THE FCC?

[1] CC Docket Nos. 89-79 and 87-313. Report and Order and Order on Further Reconsideration & Supplemental Notice of Proposed Rulemaking. Adopted June 13, 1991. Paragraph 44.

A. When Qwest files new service filings with the FCC, the Company files work papers to support Total Long Run Incremental (TSLRIC) and Shared Costs. TSLRIC plus Shared Costs together form direct costs per the FCC's definition.

Q. DO QWEST FILINGS BEFORE THE FCC INCLUDE A PRICE/COST RATIO FOR THE NEW SERVICE?

A. Yes. Included in the workpapers is a price/cost ratio which is derived by taking the price that Qwest is proposing and dividing it by the direct costs.

Q. ARE YOU AWARE OF ANY FCC ORDERS THAT SPECIFY WHAT A REASONABLE PORTION OF OVERHEAD COSTS MIGHT BE AS THEY RELATE TO PAYPHONE SERVICES?

A. Yes. In its review and approval of another Bell Operating Company's pricing, the FCC stated, "Bell Atlantic's ratio of rates to direct costs for pay phone features range from a low of zero times greater than the direct cost to a high of 3.4 times greater than the direct costs, while the ratio of rates to direct costs for the payphone features offered by other LECs ranges from a low of zero times greater than the direct costs to a high of 4.8 times greater than the direct costs."[2]

Q. WHAT ACTIONS DID QWEST TAKE REGARDING ITS PAL SERVICES AS A RESULT OF THESE FCC DIRECTIVES?

[2] CC Docket 97-140, Memorandum Opinion and Order, released October 29, 1997, at paragraph 13

A. Qwest filed its Smart PAL tariffs in the states, including in Arizona. Qwest analyzed its prices for all of its PAL services, both Smart PAL and Basic PAL, in accordance with the new services test. The Company's review showed all of the Arizona PAL prices to be in compliance with the test. On May 20, 1997, Qwest issued its certification letter, certifying its compliance with all FCC payphone deregulation requirements in a number of states, including Arizona.

Q. YOU HAVE TESTIFIED THAT QWEST HAS CERTIFIED THAT IT HAS FULLY COMPLIED WITH THE FCC'S PAYPHONE DEREGULATION REQUIREMENTS. HOW DID QWEST DETERMINE THAT ITS ARIZONA PAL PRICES MET THE FCC'S REQUIREMENTS?

A. Qwest performed the new services test on the Arizona Smart PAL and Basic PAL prices, using its current TSLRIC studies. Those analyses are attached to my testimony as proprietary Exhibit SAM-1.

Q. DO THE EXISTING AND PROPOSED PRICES OF QWEST'S BASIC AND SMART PAL FALL WITHIN THE RANGE OF RATES ACCEPTABLE UNDER THE NEW SERVICES PRICE TEST?

A. Yes. Proprietary Exhibit SAM-1 examines the proposed rates for PAL services. This demonstrates that, using TSLRIC plus Shared Costs as the floor for pricing purposes, average monthly revenue exceeds the average monthly cost and allows for a reasonable contribution. In other words, the prices are cost-based and the price/cost ratios are well within the range that has been determined to be acceptable before the FCC. Since the

current PAL rates are lower than the proposed rates, the price to cost ratios would be even lower.

QWEST'S PAL PRICES ARE JUST AND REASONABLE

Q. IN THE PAST HAVE QWEST'S BASIC PAL PRICES BEEN FOUND BY THE COMMISSION TO BE JUST AND REASONABLE?

A. Yes. When Basic PAL prices were adjusted in the previous rate case, the Commission approved the proposed prices, noting that they were unopposed.[3] At this time, the price of flat-rated full-resale Basic PAL was set at $65.40. The Commission found, "The rates and charges for telecommunications services established hereinafter are just and reasonable."[4]

Later, when the price was reduced to $42.00 as a result of the settlement agreement between Qwest and APA, the Commission approved the new price, saying, "the tariff is reasonable, fair and equitable, and is therefore in the public interest."[5]

Finally, when the 31-cent increase was applied as a result of the Court Remand of the rate case, the Commission ordered the increase, saying, "The rates and charges authorized hereinbelow for the provision of telecommunication service comply with Decision No. 58927 and the

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[3] Docket No. E-1051-93-183, Decision No. 58927, at pp. 89-90.

[4] Id., Conclusions of Law No. 5, at p. 131.

[5] Docket No. E-1051-96-234, Decision No. 59641, Conclusion of Law No. 4, at p. 2.

Court's subsequent direction and as such should be adopted."[6] The referenced decision is the original rate case order in which the PAL rates were found to be just and reasonable at $65.40.

Q. WHAT RATES ARE CURRENTLY IN EFFECT FOR PAL SERVICES?

A. The current rate for basic PAL service is $32.78. A reduction from $42.31 was ordered by the Commission in Docket E-1051-97-024.

Q. DO YOU BELIEVE THE $42.31 RATE TO BE REASONABLE?

A. Yes, as did the Commission when the rate was established. The $42.31 rate is above cost, contributes to the operating costs of the business, and contributes to the revenue requirements established by the Commission. Any rate below this level will require other services to be priced higher to maintain the proper revenue requirement. Certainly the Commission may choose to generate this revenue from another source, but this is a fair rate for this service and all competitors are on equal footing.

Q. IS THERE A RATE YOU WOULD CONSIDER TO BE AT THE BOTTOM END OF THE REASONABILITY SCALE?

A. Yes. I consider a rate equal to the flat business rate to be as low as this service could reasonably be priced. The flat business rate is the basic rate that any business pays for its basic connection to the network. It is not reasonable that payphone service providers contribute to Qwest's operating costs any less than other businesses do. This is a cost of

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[6] Docket No. E-1051-93-183, Decision No. 59826, Conclusion of Law No. 5, at p. 7.

operation for many types of business customers and it should be the absolute price floor for PAL services as well.

Q. SHOULD THE PRICE/COST RELATIONSHIP BE THE SAME FOR SMART PAL AS IT IS FOR BASIC PAL?

A. Yes. This relationship is important in order to maintain competitive neutrality between payphone providers. At this point in the development of the payphone industry, Independent Payphone Providers use smart payphone sets almost exclusively, and Qwest has generally used dumb payphone sets. Thus, it is important to keep the price/cost relationship the same on both PAL services so that the difference between the Basic PAL price and the Smart PAL price is strictly driven by costs.

CONCLUSIONS AND RECOMMENDATIONS ON PAL

Q. PLEASE STATE YOUR CONCLUSIONS CONCERNING THE APA'S POSITION ON PAL SERVICE.

A. As also discussed by Dr. Taylor, in his testimony submitted on behalf of Qwest, a wide range of prices satisfy the FCC New Services Test and rates from the current $32.78 to the previous $42.31 fall in this category. The Commission Staff has supported even higher rates in the past and none have been deemed unreasonable in a regulated context. The APA merely wants lower rates. This is understandable, but not justifiable compared to what other businesses must pay for service. The APA

1 expects preferential treatment but has offered no reason why they should
2 receive rates supported by other ratepayers.
3
4 **Q. WHAT DO YOU RECOMMEND TO THE COMMISSION CONCERNING**
5 **PAL RATES?**
6 A. I recommend that the Commission approve Qwest's original proposal to
7 eliminate two obsolete PAL options, reject APA's challenge to the Basic
8 PAL prices and reestablish the $42.78 rate which is under appeal at this
9 time.
10
11 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**
12 A. Yes, it does.

BEFORE THE

ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF U S WEST COMMUNICATIONS, INC. A COLORADO CORPORATION, FOR A HEARING TO DETERMINE THE EARNINGS OF THE COMPANY FOR RATEMAKING PURPOSES, TO FIX A JUST AND REASONABLE RATE OF RETURN THEREON AND TO APPROVE RATE SCHEDULES	)	DOCKET NO. T-01051B-99-0105

EXHIBITS OF

SCOTT A. MCINTYRE

QWEST CORPORATION

AUGUST 21, 2000

INDEX OF EXHIBITS

DESCRIPTION	EXHIBIT
New Services Price Test Analysis (PROPRIETARY)	SAM-1

QWEST CORPORATION

NEW SERVICES PRICE TEST ANALYSIS

Smart PAL & Basic PAL Flat Rated

	Costs are TSLRIC+SC	U S WEST Tariff Basic PAL	U S WEST Tariff Smart PAL
1.	Flat Cost	Redacted	Redacted
2.	Flat Rate (per tariff)	$ 42.31	$ 46.58
3.	Zone Chgs (Note 1)	$ 0.10	$ 0.10
4.	EUCL (July '00)	$ 4.35	$ 4.35
5.	Total Rate (2+3+4)	$ 46.76	$ 51.03
6.	**Rate divided by Cost (5/1)**	Redacted	Redacted

Note 1: Weighted average Zone charges.

BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF QWEST CORPORATION (FORMERLY KNOWN AS U S WEST COMMUNICATIONS, INC.), A COLORADO CORPORATION, FOR A HEARING TO DETERMINE THE EARNINGS OF THE COMPANY, THE FAIR VALUE OF THE COMPANY FOR RATEMAKING PURPOSES, TO FIX A JUST AND REASONABLE RATE OF RETURN THEREON, AND TO APPPROVE RATE SCHEDULES DESIGNED TO DEVELOP SUCH RETURN.	)	**DOCKET NO. T-1051B-99-105**
	)	**AFFIDAVIT OF SCOTT A. MCINTYRE**
STATE OF WASHINGTON	) :	**ss**
COUNTY OF KING	)	

Scott A. McIntyre, of lawful age being first duly sworn, depose and states:

1. My name is Scott A. McIntyre. I am Director – Product and Market Issues, of Qwest Corporation (formerly known as U S WEST Communications, Inc.) in Seattle, Washington. I have caused to be filed written testimony in support of USWC in Docket No. T-01051B-99-0105

2. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct to the best of my knowledge and belief.

Further affiant sayeth not.

Scott A. McIntyre

SUBSCRIBED AND SWORN to before me this 17th day of August, 2000.

ANGIE LEIFER
NOTARY PUBLIC
COMMISSION EXPIRES 8-08-02
STATE OF WASHINGTON

Notary Public residing at
Seattle, Washington.

My Commission Expires: 8/8/02